



Empowering a **SMART FUTURE**

Avalue IoT Ready

- Healthcare
- Retail
- Transportation
- Manufacture
- Digital Signage
- Communication
- Surveillance
- Automation
- In-Vehicle
- Gaming

3.5" Single Board Computer



3.5" Single Board Computer				
Model Number	ECM-CFS	ECM-KBLH	ECM-SKLH	ECM-WHL
Processor	8/9th Gen Intel® Core™ i7/i5/i3/Celeron® rPGA processor	7th Gen Intel® Core™ i7/i5/i3/Celeron® processor	6th Gen Intel® Core™ i7/i5/i3/Celeron® processor	8th Gen Intel® Core™ i7/i5/i3/Celeron® Processor (with CPU Bottom Mounted)
System Chipset	Intel® Q370/H310 Express Chipset	Intel® QM175 Express Chipset	Intel® QM170 Express Chipset	N/A
System Memory	1 x 260-Pin DDR4 2400MHz SO-DIMM up to 32 GB	1 x 260-Pin DDR4 2400MHz SO-DIMM up to 16 GB	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	2X 260-pin DDR4 2400MHz SO-DIMM up to 64GB
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec.	H/W Reset, 1sec. ~ 65535sec.	H/W Reset, 1sec. ~ 65535sec.	H/W Reset, 1sec. ~ 65535sec.
Expansion	1 x Mini PCIe Supports mSATA (Q370 support mPCIe/mSATA/USB2.0 device, H310 support mSATA/USB2.0 device)	1 x Mini PCIe Supports mSATA 1 x M.2 (2242) B-Key	1 x Mini PCIe Supports mSATA 1 x M.2 (2242) B-Key	1 x M.2 (2242/3042) B Key, (SATA, USB3.0/2.0, SIM Slot) 1 x M.2 E Key 2230, (PCIe, USB2.0, CNVi)
Storage	1 x mSATA Supported from Mini PCIe	1 x mSATA Supported from Mini PCIe, 1 x M.2 (M.2 support SATA or PCIe x1/USB)	1 x mSATA Supported from Mini PCIe, 1 x M.2 (M.2 support SATA or PCIe x1/USB)	1 x SATA III 1 x M.2 B Key (2242)
I/O	2 x USB 2.0, 4 x USB 3.1, 2 x SATA III, 2 x RS-232, 1 x 8bit GPIO, 1 x LPC, 1 x SPI	2 x USB 2.0, 4 x USB 3.0, 2 x SATA III, 1 x RS-232, 1 x RS-232/422/485, 1 x 8bit GPIO, 1 x LPC, 1 x SPI	2 x USB 2.0, 4 x USB 3.0, 2 x SATA III, 1 x RS-232, 1 x RS-232/422/485, 1 x 8bit GPIO, 1 x LPC, 1 x SPI	2 x USB 2.0, 4 x USB 3.1, 1 x SATA III, 1 x 8-bit GPIO, 1 x LPC, 1 x SPI
Display Chipset	Intel® UHD Graphics 630 Intel® UHD Graphics 610 H310 only support Dual Display: LVDS+HDMI1 (default LVDS enable) or HDMI1+HDMI2 (LVDS disabled) Q370 support Triple Display	Intel® Kaby lake SoC integrated Graphics Supports triple display	Intel® Skylake SoC integrated Graphics Supports triple display	Intel® UHD Graphics 620 (i7-8665UE, i5-8365UE, i3-8145UE), Intel® UHD Graphics 610 (4305UE) support triple display
Resolution	Dual HDMI: Max. resolution 4096 x 2304 @ 30Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	Dual HDMI: Max. resolution 4096 x 2160 @ 24Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	Dual HDMI: Max. resolution 4096 x 2160 @ 24Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	Dual HDMI: Max. Resolution 4096 x 2160 @ 24/30Hz, LVDS: Max. Resolution 1920 x 1080 @ 60Hz
Audio Chipset	Realtek Audio code Mic-In, Line-In, Line-Out	Realtek Audio code Audio Amp.:2W	Realtek Audio code Audio Amp.:2W	Realtek Audio code Mic-In, Line-In, Line-Out
Ethernet Chipset	1 x Intel® I211AT 1 x Intel® I219LM	1 x Intel® I210AT 1 x Intel® I219LM	1 x Intel® I210AT 1 x Intel® I219LM	1 x Intel® I210AT 1 x Intel® I219LM
Power Requirement	+12V	+12V	+12V	+12V
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temperature	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)
Dimension (L x W)	5.7" x 4" (146 mm x 101 mm)			

3.5" Single Board Computer					
Model Number	ECM-KBLU	ECM-SKLU	ECM-APL	ECM-APL2-A	ECM-BSWA
Processor	7th Gen Intel® Core™ i7/i5/i3/Celeron® Processor	6th Gen Intel® Core™ i7/i5/i3/Celeron® processor	Intel® Pentium®/Celeron®/Atom™ SoC Processor	Intel® Pentium®/Celeron®/Atom™ SoC Processor (with CPU Bottom Mounted)	Intel® Pentium®/Celeron® processor
System Chipset	N/A	N/A	N/A	N/A	N/A
System Memory	1 x 260-Pin DDR4 2133MT/s SO-DIMM Up to 16 GB	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	1 x 204-Pin DDR3L 1866MHz SO-DIMM, supports 4G/8G & Up to 8GB DDR3L 1866MTs SDRAM (Non-ECC)	1 x 204-Pin DDR3L 1866MHz SO-DIMM, supports 4G/8G & Up to 8GB DDR3L 1866MTs SDRAM (Non-ECC)	1 x 204-Pin DDR3L 1600MHz SO-DIMM up to 8 GB
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec.	H/W Reset, 1sec. ~ 65535sec.	H/W Reset, 1sec. ~ 65535sec. and 1sec./step	H/W Reset, 1sec. ~ 65535sec. and 1sec./step	H/W Reset: 1sec. ~ 65535sec./min. and 1sec. or 1min./step
Expansion	1 x Full Size mPCIe, 1 x M.2 (2242/3042) B Key	1 x Mini PCIe Supports mSATA 1 x M.2 (2242) B-Key	1 x Mini PCIe (for PCIe & USB2.0) 1 x M.2 (2242) B-Key	2 x Mini PCIe 1 x Full-size Mini PCIe with mSATA Supported 1 x Half-size Mini PCIe	2 x Mini PCIe, 1 x Full-size Mini PCIe with mSATA Supported 1 x Half-size Mini PCIe
Storage	1 x mSATA support from Mini PCIe, 1 x M.2 (M.2 support SATA or PCIe x1/USB)	1 x mSATA Supported from Mini PCIe 1 x M.2 (M.2 support SATA or PCIe x1/USB)	1 x M.2 (M.2 support SATA or PCIe x1/USB)	1 x mSATA Supported from Mini PCIe	1 x mSATA Supported from Mini PCIe
I/O	2 x USB 2.0, 4 x USB 3.0, 1 x SATA III, 5 x RS-232, 1 x RS-232/422/485, 1 x 8bit GPIO, 1 x LPC, 1 x SPI	2 x USB 2.0, 4 x USB 3.0, 1 x SATA III, 5 x RS-232, 1 x RS-232/422/485, 1 x 8bit GPIO, 1 x LPC, 1 x SPI	1 x USB 2.0, 4 x USB 3.0, 1 x SATA III, 5 x RS-232, 1 x RS-232/422/485, 1 x Micro SIM Card Slot, 1 x 8bit GPIO, 1 x LPC, 1 x SPI	2 x USB 2.0, 4 x USB 3.0, 1 x SATA III, 2 x RS-232/422/485, 1 x 8bit GPIO, 1 x LPC, 1 x SPI	2 x USB 2.0, 4 x USB 3.0, 1 x SATA III, 5 x RS-232, 1 x RS-232/422/485, 1 x 8bit GPIO, 1 x LPC, 1 x SPI
Display Chipset	Intel® HD Graphics 620 (i7-7600U, i5-7300U, i3-7100U), Intel® HD Graphics 610 (Celeron 3965U) support triple display	Intel® Skylake U SoC integrated Graphics Supports triple display	Intel® Apollo Lake SoC integrated Gen9 LP Graphics Supports triple display	Intel® Apollo Lake SoC integrated Gen9 LP Graphics Supports triple display	Intel® Braswell SoC integrated Graphics Supports triple display
Resolution	Dual HDMI: Max. Resolution 4096 x 2160 @ 24Hz, LVDS: Max. Resolution 1920 x 1080 @ 60Hz	Dual HDMI: Max. resolution 4096 x 2160 @ 24Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	Dual HDMI: Max. resolution 3840 x 2160 @ 30Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	Dual HDMI: Max. resolution 3840 x 2160 @ 30Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	HDMI: Max. resolution 1920 x 1080 @ 30Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz
Audio Chipset	Realtek Audio code Mic-In, Line-In, Line-Out	Realtek Audio code Mic-In, Line-In, Line-Out	Realtek Audio code Mic-In, Line-In, Line-Out	Realtek Audio code Mic-In, Line-In, Line-Out	Realtek Audio code Mic-In, Line-In, Line-Out
Ethernet Chipset	1 x Intel® I211AT 1 x Intel® I219LM	1 x Intel® I210AT 1 x Intel® I219LM	2 x Intel® I211AT (Intel I210IT for WT)	2 x Intel® I211AT (Intel I210IT for WT)	2 x Intel I211AT
Power Requirement	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F) -40°C ~ 85°C (-40°F ~ 185°F) (Optional for Wide Temp.)	0°C ~ 60°C (32°F ~ 140°F) -40°C ~ 85°C (-40°F ~ 185°F) (Optional for Wide Temp.)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	5.7" x 4" (146 mm x 101 mm)				



3.5" Single Board Computer

Thin Mini-ITX



3.5" Single Board Computer

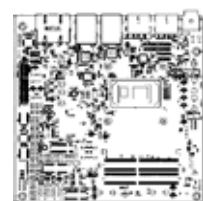
Model Number	ECM-BYT2	ECM-BYT	ECM-KA	ECM-A50M
Processor	Intel® Atom™/ Celeron® processor (with CPU Bottom Mounted)	Intel® Atom™/ Celeron® processor	AMD G-Series processor	AMD G-Series processor
System Chipset	N/A	N/A	N/A	AMD G-Series A50M Chipset
System Memory	1 x 204-Pin DDR3L 1066/1333MHz SO-DIMM up to 8 GB	1 x 204-Pin DDR3L 1066/1333MHz SO-DIMM up to 8 GB	1 x 204-Pin DDR3 1600MHz SO-DIMM up to 8 GB	1 x 204-Pin DDR3 1066MHz SO-DIMM up to 8 GB
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec and 1sec. or 1min./step	H/W Reset, 1sec. ~ 65535sec and 1sec. or 1min./step	H/W Reset, 1sec. ~ 65535sec.	H/W Reset, 1sec. ~ 65535sec./min. and 1sec. or 1min./step
Expansion	2 x Mini PCIe, 1 x Full-size Mini PCIe with mSATA Supported, 1 x Half-size Mini PCIe	1 x Mini PCIe Supports mSATA	1 x Mini PCIe Supports mSATA	1 x Mini PCIe Supports mSATA
Storage	1 x mSATA Supported from Mini PCIe	1 x CompactFlash Type I/II Socket 1 x mSATA Supported from Mini PCIe	1 x CompactFlash Type I/II Socket 1 x mSATA Supported from Mini PCIe	1 x CompactFlash Type I/II Socket
I/O	7 x USB 2.0, 1 x USB 3.0, 1 x SATA II, 1 x RS-232, 1 x RS-232/422/485, 1 x 8bit GPIO, 1 x LPC	5 x USB 2.0, 1 x USB 3.0, 1 x SATA II, 3 x RS-232, 1 x RS-232/422/485, 1 x 8bit GPIO, 1 x LPC, 1 x PS2/ KB & MS	6 x USB 2.0, 2 x USB 3.0, 2 x SATA III, 1 x RS-232, 1 x RS-232/422/485, 1 x 8bit GPIO, 1 x LPC, 1 x SPI, 1 x PS2/ KB & MS	7 x USB 2.0, 2 x SATA II, 1 x RS-232, 1 x RS-232/422/485, 1 x 16bit GPIO, 1 x LPC, 1 x SPI, 1 x PS2/ KB & MS
Display Chipset	Intel® Valleyview SoC integrated Graphics Supports dual display	Intel® Valleyview SoC integrated Graphics Supports dual display	AMD SoC Integrated Graphics Supports dual display	AMD Fusion Accelerated Processors Supports dual display
Resolution	VGA: Max. resolution 2560 x 1080 @ 60Hz HDMI: Max. resolution 1920 x 1200 @ 60Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	VGA: Max. resolution 2560 x 1080 @ 60Hz HDMI: Max. resolution 1920 x 1200 @ 60Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	VGA: Max. resolution 1920 x 1200 @ 60Hz HDMI: Max. resolution 1920 x 1080 @ 60Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	For T56N: VGA: 2560 x 1600 @ 75Hz LVDS: 2048 x 1536 @ 75Hz For T40E: VGA: 1920 x 1200 @ 75Hz LVDS: 1920 x 1200 @ 75Hz
Audio Chipset	Realtek Audio code Mic-In, Line-In, Line-Out	Realtek Audio code Mic-In, Line-In, Line-Out	Realtek Audio code Mic-In, Line-In, Line-Out	Realtek Audio code Mic-In, Line-In, Line-Out
Ethernet Chipset	2 x Realtek 8111E	2 x Intel® I211AT	2 x Realtek 8111E	2 x Realtek 8111E
Power Requirement	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V	+12V
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F) -40°C ~ 85°C (-40°F ~ 185°F) (Optional for Wide Temp.)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	5.7" x 4" (146 mm x 101 mm)			

Thin Mini-ITX

Model Number	EMX-TGLP	EMX-WHLGP	EMX-KBLU2P	EMX-SKLUP	EMX-SKLGFP
Processor	Onboard 11th Gen Intel® Tiger Lake U Core™ & Celeron® BGA Processor	Onboard 8th Gen Intel® Whiskey Lake U Core™ SoC i7/i5/i3 & Celeron® BGA Processor	Onboard 6th/7th Gen. Intel® Core™ SoC i7/i5/i3 & Celeron® BGA Processor	Onboard 6th Gen. Intel® Core™ & Celeron® BGA Processor	Onboard 6th/7th Gen. Intel® Core™ & Celeron® BGA Processor
System Chipset	N/A	N/A	N/A	N/A	N/A
System Memory	2 x 260-pin DDR4 3200MHz SO-DIMM supports up to 64GB	2 x 260-pin DDR4 2400MHz SO-DIMM supports up to 32GB	2 x 260-pin DDR4 2133MHz SO-DIMM supports up to 32GB	2 x 260-pin DDR4 2133MHz SO-DIMM supports up to 32GB	2 x 260-pin DDR4 2133 MHz SO-DIMM supports up to 32GB
Expansion	1 x PCI-e x4 1 x M.2 B-Key 1 x M.2 E-Key	1 x M.2 B-Key 1 x M.2 A-Key	1 x PCI-e x1 1 x M.2 B-Key 1 x M.2 A-Key	1 x PCI-e x1 1 x M.2 B-Key, 1 x M.2 A-Key, 1 x SD card slot (Optional)	1 x Mini PCI-e 1 x M.2 A-Key
Display	Intel® 12th Gen. CPU integrated 4 Display 2 x DP++, DP, DP/LVDS	Intel® 8th Gen. CPU integrated HDMI/LVDS, HDMI, HDMI	Intel® 6th/ 7th Gen. CPU integrated DP++, HDMI/DP, LVDS	Intel® 6th Generation CPU integrated Triple Display	Intel® Skylake U SoC integrated Graphics Triple Display HDMI + LVDS + VGA
Resolution	2 x DP++: 4096 x 2304@60 Hz, DP: 4096 x 2304@60 Hz, (2 x DP++, DP, DP/LVDS) Dual Channel 18/24bits LVDS 1920 x 1080	3 x HDMI 1.4b: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 30Hz, (1 x HDMI/LVDS, 1 x HDMI, 1 x HDMI) Dual Channel 18/24bits LVDS 1920 x 1080	1 x HDMI 1.4b: 3840 x 2160 @ 30 Hz, 2560 x 1600 @ 30Hz 2 x DP: DisplayPort 1.2a : 4096 x 2160 @ 60Hz (1 x HDMI/DP, 1 x DP++), Dual channel 18/24-bits LVDS, Co-layer eDP 1.3: 4096 x 2160 BOM optional	HDMI 1.4b: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 30Hz 2 x DP 1.2a: 4096 x 2160 @ 60Hz (1 x HDMI/DP, 1 x DP++), Dual channel 18/24-bits LVDS, Co-layer eDP 1.3: 4096 x 2160 BOM optional	HDMI: 1.4b: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 30Hz LVDS: 1920 x 1080 @ 60Hz; VGA: 2048 x 1536 @ 50Hz Co-layer eDP 1.3: 4096 x 2160 BOM optional
Audio	Realtek Audio code 2 x 6W Audio Amplifier	Realtek Audio code Mic-in, Line-out, Line-in 2 x 6W Audio Amplifier	Realtek Audio code Mic-in, Line-out, Line-in 2 x 6W Audio Amplifier	Realtek Audio code Mic-in, Line-out 2 x 6W Audio Amplifier	Realtek Audio code Mic-in, Line-out 2 x 6W Audio Amplifier
Ethernet	1 x Intel® I255LM 1 x Intel® I219LM 2 x Intel® I210IT	1 x Intel® I219LM 2 x Intel® I210IT	1 x Intel® I219LM 1 x Intel® I210IT	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT
USB/SATA/COM/LAN	8/2/6/4	8/1/6/3	8/2/6/2	8/2/6/2	12/2/6/2
Power Requirement	+12V~24V	+12V~24V	+12V~24V	+12V~24V	+12V~24V
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temp.	0 ~ 60°C (32°F ~ 140°F) -20 ~ 60°C (-4~140°F)	-20 ~ 60°C (-4~140°F)	-20 ~ 70°C (-4~158°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)
Weight	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)



Thin Mini-ITX



Thin Mini-ITX				
Model Number	EMX-EHLP	EMX-APLP	EMX-BSWP	EMX-BYT3
Processor	Intel® Pentium®/ Celeron®/Atom™ SoC Processor	Intel® Pentium®/ Celeron®/ Atom™ SoC Processor	Intel® Celeron® Processor N3160 (2M Cache, up to 2.24 GHz)	Intel® Celeron® Processor J1900 (2M Cache, Up to 2.42 GHz)
System Chipset	N/A	N/A	N/A	N/A
System Memory	2 x 260-pin DDR4 3200MHz SO-DIMM supports up to 32GB	2 x 204-pin DDR3L 1333/1600MHz SO-DIMM supports up to 16GB	2 x 204-pin DDR3L 1600MHz SO-DIMM supports up to 8GB	2 x 204-pin DDR3L 1333 MHz SO-DIMM supports up to 8GB
Expansion	1 x M.2 B-Key 1 x M.2 E-Key	1 x PCI-e 2 x Mini PCI-e 1 x SD card slot 1 x SIM card slot	1 x PCI-e 2 x Mini PCI-e, 1 x SD card slot, 1 x SIM card slot	2 x Mini PCI-e, 1 x SIM card slot
Display	Intel® Elkhart Lake SoC Processor integrated DP++, HDMI, LVDS	Intel® Apollo Lake SoC integrated Gen Graphics Supports triple display HDMI + LVDS, HDMI/DP + DP, HDMI + LVDS	Intel® Atom™/ Celeron® SoC Integrated Graphics HDMI + LVDS, HDMI + VGA, VGA + LVDS	Intel® Atom™/ Celeron® SoC integrated Graphics HDMI + LVDS, HDMI + VGA, VGA + LVDS
Resolution	1 x HDMI 2.0b: 4096 x 2160 @ 60 Hz 1 x DP++: 4096 x 2160 @ 60 Hz Dual Channel 18/24bits LVDS 1920 x 1080	HDMI 1.4b: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 30Hz; LVDS: 1920 x 1080 @ 60Hz; 2 x DP 1.2a: 4096 x 2160 @ 60Hz (1 x HDMI/DP, 1 x DP)	VGA: 2560 x 1600 @ 60Hz HDMI: 3840 x 2160 @ 30Hz LVDS: 1920 x 1080 @ 60Hz	VGA: 2560 x 1600 @ 60Hz HDMI: 1920 x 1200 @ 60Hz LVDS: 1920 x 1080 @ 60Hz
Audio	Realtek Audio code Mic-in, Line-out 2 x 6W Audio Amplifier	Realtek Audio code Mic-in, Line-out 2 x 3W Audio Amplifier	Realtek Audio code Mic-in, Line-out 2 x 3W Audio Amplifier	Realtek Audio code Mic-in, Line-out 2 x 3W Audio Amplifier
Ethernet	2 x Intel® I225LM 2 x Intel® I210IT	2 x Intel I211AT	2 x Intel® I211AT	2 x Intel® I211AT
USB/SATA/COM/LAN	8/1/2/4	9/2/6/2	8/2/6/2	6/2/8/2
Power Requirement	+12V ~ 24V	+12V ~ 24V	+12V	+12V ~ 24V
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temp.	-20 ~ 70°C (-4~158°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)
Dimension (L x W)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)
Weight	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)

Thin Mini-ITX			
Model Number	EMX-BYT2	EMX-C246DP	EMX-H310DP
Processor	Intel® Celeron® Processor J1900 (2M Cache, Up to 2.42 GHz)	Intel® LGA1151 Socket Supports 8/9th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors	Intel® LGA1151 Socket Supports 8/9th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors
System Chipset	N/A	Intel® C246 Chipset	Intel® H310 Chipset
System Memory	2 x 204-pin DDR3L 1333MHz SO-DIMM supports up to 8GB	2 x 260-pin DDR4 2400/2666MHz SO-DIMM supports up to 64GB (ECC memory supported by CPU)	2 x 260-pin DDR4 2400/2666MHz SO-DIMM supports up to 64GB
Expansion	1 x PCI-e 2 x Mini PCI-e, 1 x SD card slot, 1 x SIM card slot	1 x PCI-e x16 1 x M.2 M-Key 1 x M.2 E-Key 1 x M.2 B-Key	1 x PCI-e x16 1 x M.2 E-Key 1 x M.2 B-Key
Display	Intel® Atom™/ Celeron® SoC Integrated Graphics HDMI + LVDS, HDMI + VGA, VGA + LVDS	Intel® 8/9th Gen. CPU integrated HDMI + HDMI + LVDS	Intel® 8/9th Gen. CPU integrated HDMI + HDMI + LVDS
Resolution	VGA: 2560 x 1600 @ 60Hz HDMI: 1920 x 1200 @ 60Hz LVDS 1920 x 1080 @ 60Hz	3 x HDMI 1.4b: 3840 x 2160 @ 30 Hz 2560 x 1600 @ 30 Hz	3 x HDMI 1.4b: 3840 x 2160 @ 30 Hz 2560 x 1600 @ 30 Hz
Audio	Realtek Audio code Mic-in, Line-out 2 x 3W Audio Amplifier	Realtek Audio code 6W Audio Amplifier	Realtek Audio code 6W Audio Amplifier
Ethernet	2 x Intel® I211AT	1 x Intel® I219LM 2 x Intel® I210AT	1 x Intel® I219LM 2 x Intel® I210AT
USB/SATA/COM/LAN	6/2/6/2	10/2/4/3	8/2/4/3
Power Requirement	+12V	+12V ~ 28V	+12V ~ 28V
Power Type	AT/ATX	AT/ATX	AT/ATX
Operating Temp.	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)
Weight	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)



Mini ITX / Pico ITX



Mini ITX				
Model Number	EMX-H310P	EMX-C246P	EMX-Q170KP	EMX-Q170P
Processor	Intel® LGA1151 Socket Supports 8/9th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors	Intel® LGA1151 Socket Supports 8/9th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors	Intel® LGA1151 Socket Supports 6/7th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors (Max. TDP at 95W)	Intel® LGA1151 Socket Supports 6th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors (Max. TDP at 95W)
System Chipset	Intel® H310 Chipset	Intel® C246 Chipset	Intel® Q170 Chipset	
System Memory	2 x 260-pin DDR4 2400/2666MHz SO-DIMM supports up to 64GB	2 x 260-pin DDR4 2400/2666MHz SO-DIMM supports up to 64GB (ECC memory supported by CPU)	2 x 260-pin DDR4 2400MHz SO-DIMM supports up to 32GB	
Expansion	1 x PCI-e x16 1 x M.2 B-Key 1 x M.2 E-Key	1 x PCI-e x16 1 x M.2 M-Key 1 x M.2 E-Key	1 x PCI-e x16 1 x Full Size Mini PCI-e 1 x Half Size Mini PCI-e	
Display	Intel® 8/9th Gen. CPU integrated VGA + LVDS, VGA + HDMI, VGA + DP, HDMI + LVDS, HDMI + DP, LVDS + DP	Intel® 8/9th Gen. CPU integrated VGA + HDMI + LVDS	Intel® 6/7th Gen. CPU integrated VGA + LVDS, VGA + HDMI, VGA + DP, HDMI + LVDS, HDMI + DP, LVDS + DP	
Resolution	VGA: 2048 x 1536 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 30Hz DP++: 4096x2160@30Hz Dual channel 18/24-bits LVDS (Chrontel CH7511B eDP to LVDS) By BOM option	VGA: 2048 x 1536 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 30Hz DP++: 4096x2160@30Hz Dual channel 18/24-bits LVDS (Chrontel CH7511B eDP to LVDS) By BOM option	VGA: 2048 x 1536 @ 50Hz HDMI: 4096 x 2160 @ 24Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz Dual channel 18/24-bits LVDS (Chrontel CH7511B eDP to LVDS)	
Audio	Realtek Audio code 6W Audio Amplifier	Realtek Audio code 6W Audio Amplifier	Realtek Audio code Mic-in, Line-out, Line-in 6W Audio Amplifier	
Ethernet	1 x Intel® I219LM 3 x Intel® I210AT	1 x Intel® I219LM 3 x Intel® I210AT	1 x Intel® I219LM 1 x Intel® I211AT	
USB/SATA/COM/LAN	12/3/6/4	13/4/6/4	12/6/6/2	
Power Requirement	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V	
Power Type	AT/ATX	AT/ATX	AT/ATX	
Operating Temp.	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	
Dimension (L x W)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	
Weight	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	

Mini ITX	
EMX-H110KP	EMX-H110P
Intel® LGA1151 Socket Supports 6/7th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors (Max. TDP at 95W)	Intel® LGA1151 Socket Supports 6th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors (Max. TDP at 95W)
Intel® H110 Chipset	
2 x 260-pin DDR4 2400MHz SO-DIMM supports up to 32GB	
1 x PCI-e x16 1 x Full Size Mini PCI-e 1 x Half Size Mini PCI-e	
Intel® 6/7th Gen. CPU integrated VGA + LVDS, VGA + HDMI, VGA + DP, HDMI + LVDS, HDMI + DP, LVDS + DP	
VGA: 2048 x 1536 @ 50Hz HDMI: 4096 x 2160 @ 24Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz Dual channel 18/24-bits LVDS (Chrontel CH7511B eDP to LVDS)	
Realtek Audio code Mic-in, Line-out, Line-in 6W Audio Amplifier	
1 x Intel® I219LM 1 x Intel® I211AT	
8/4/6/2	
+12V/+5V/5VSB/+3.3V/-12V	
AT/ATX	
0°C ~ 60°C (32°F ~ 140°F)	
6.69" x 6.69" (170 mm x 170 mm)	
0.88 lbs (0.4 kg)	

Pico ITX		
Model Number	EPX-EHLP	EPX-APLP
Processor	Intel® Pentium®/ Celeron®/Atom™ SoC Processor	Intel® Pentium®/ Celeron®/Atom™ SoC Processor
System Chipset	N/A	N/A
System Memory	1 x 260-pin DDR4 3200MHz SO-DIMM supports up to 32 GB	1 x 204-pin DDR3L 1600 & 1333MHz SO-DIMM supports up to 8 GB
Expansion	1 x M.2 Key-B, 1 x M.2 Key-E, 1 x Micro SIM to SIM adapter by option	1 x M.2 Key-B, 1 x M.2 Key-A, 1 x Micro SIM to SIM adapter by option
Display	Intel® Atom™/ Celeron®/Pentium® SoC Integrated Graphics DP++/HDMI/LVDS	Intel® Atom™/ Celeron®/Pentium® SoC Integrated Graphics HDMI + LVDS, HDM/DPI + DP, HDMI + LVDS
Resolution	HDMI 2.0b: 4096 x 2160 @ 60 Hz DP++: 4096 x 2160 @ 60Hz LVDS: 1920 x 1080 (1 x HDMI, 1 x DP++, LVDS)	HDMI 1.4b: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 30Hz LVDS: 1920 x 1800 @ 60Hz 2 x DP 1.2a: 4096 x 2160 @ 60Hz (1 x HDMI/DP, 1 x DP)
Audio	Realtek Audio code 2 x 3W Audio Amplifier	Realtek Audio code Mic-in, Line-out 2 x 3W Audio Amplifier
Ethernet	2 x Intel® I225LM 1 x Intel® I210IT	2 x Intel® I211AT
USB/SATA/COM/LAN	6/1/2/2	6/1/6/2
Power Requirement	+12V	+12V
Power Type	AT/ATX	ATX
Operating Temp.	-10~60°C (-14~140°F) -30~60°C (-22~140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	3.93" x 2.83" (100 mm x 72 mm)	3.93" x 2.83" (100 mm x 72 mm)
Weight	0.88 lbs (0.4 Kg)	0.88 lbs (0.4 Kg)

ATX / Micro ATX



ATX				
Model Number	EAX-W480P	EAX-C246P	EAX-C246BP	EAX-Q170KP (C236KP)
Processor	Intel® LGA1120 Socket Supports 10th Gen. Intel® Xeon® (Workstation)/Core™, Pentium®/ Celeron® Processors	Intel® LGA1151 Socket Supports 8/9th Gen. Intel® Xeon® (Workstation)/Core™, Pentium®/ Celeron® Processors	Intel® LGA1151 Socket Supports 8/9th Gen. Intel® Xeon® (Workstation)/Core™, Pentium®/ Celeron® Processors	Intel® LGA1151 Socket Supports 6/7th Gen. Core™, Pentium®/ Celeron® Processors (Max. TDP at 95W) *C236KP support Intel® Xeon® (Workstation)
System Chipset	Intel® W480E Chipset	Intel® C246 Chipset	Intel® C246 Chipset	Intel® Q170 Chipset (Co-lay C236 Chipset)
System Memory	4 x 288-pin DDR4 2400/2666/2933MHz DIMM supports up to 128GB (ECC memory supported by CPU)	4 x 288-pin DDR4 2400/2666MHz DIMM supports up to 128GB (ECC memory supported by CPU)	4 x 288-pin DDR4 2400/2666MHz DIMM supports up to 128GB (ECC memory supported by CPU)	4 x 288-pin DDR4 2400MHz DIMM supports up to 64GB *C236: (ECC memory supported by CPU)
Expansion	1 x PCI-e x16 or 2 x PCI-e x8, 4 x PCI-e x4	1 x PCI, 1 x PCI-e x16 or 2 x PCI-e x8 by BOM, 1 x PCI-e x4, 3 x PCI-e x1, 1 x M.2 M-Key, 1 x M.2 A-Key=	1 x PCI, 1 x PCI-e x16 or 2 x PCI-e x8 by auto switch, 3 x PCI-e x4	4 x PCI, 1 x PCI-e x16 1 x PCI-e x4, 1 x PCI-e x1 1 x M.2 Key-A, 1 x SIM card slot, 1 x Full/Half Size Mini-PCIe
Display	Intel® 10th Gen. CPU Integrated DVI-D + DP++ + DP++	Intel® 8/9th Gen. CPU Integrated VGA + HDMI + DP	Intel® 8/9th Gen. CPU Integrated DVI-I + DP++ + DP++	Intel® 6/7th Gen. CPU Integrated VGA + HDMI + DP
Resolution	DVI-D: 2048 x 1536 @ 60Hz DP++: 3840 x 2160 @ 60Hz	VGA: 2048 x 1536 @ 60 Hz HDMI: 3840 x 2160 @ 30 Hz, 2560 x 1600 @ 30 Hz DP: 4096 x 2304 @ 60Hz	DVI-I: 2048 x 1536 @ 60 Hz 2 x DP++: 4096 x 2304 @ 60Hz	VGA: 2048 x 1536 @ 50Hz HDMI: 4096 x 2160 @ 24Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz
Audio	N/A	Realtek Audio code Mic-in, Line-in, Line-out 1 x 6W Audio Amplifier	Realtek Audio code Mic-in, Line-in, Line-out 1 x 6W Audio Amplifier	Realtek Audio code Mic-in, Line-in, Line-out 2 x 6W Audio Amplifier
Ethernet	1 x Intel® I225V 1 x Intel® I219LM 1 x Intel® I210AT	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I210AT	1 x Intel® I219LM 1 x Intel® I211AT
USB/SATA/COM/LAN	12/4/10/3	14/6/10/2	16/4/10/2	12/6/6/2
Power Requirement	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5Vsb/+3.3V/-12V
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temp.	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)
Dimension (L x W)	12" x 9.6" (304.8 mm x 243.84 mm)	12" x 9.6" (304.8 mm x 243.84 mm)	12" x 9.6" (304.8 mm x 243.84 mm)	12" x 9.6" (304.8 mm x 243.84 mm)
Weight	1.32 lbs (0.6 kg)	1.32 lbs (0.6 kg)	1.32 lbs (0.6 kg)	1.32 lbs (0.6 kg)

ATX		
Model Number	EAX-Q170P	EAX-H110KP
Processor	Intel® LGA1151 Socket Supports 6th Gen. Core™, Pentium®/ Celeron® Processors (Max. TDP at 95W)	Intel® LGA1151 Socket Supports 6/7th Gen. Core™, Pentium®/ Celeron® Processors (Max. TDP at 95W)
System Chipset	Intel® Q170 Chipset	Intel® H110 Chipset
System Memory	4 x 288-pin DDR4 2400MHz DIMM supports up to 64GB	2 x 288-pin DDR4 2400MHz DIMM supports up to 32GB
Expansion	4 x PCI, 1 x PCI-e x16 1 x PCI-e x4, 1 x PCI-e x1 1 x M.2 Key-A, 1 x SIM card slot, 1 x Full/Half Size Mini-PCIe	4 x PCI, 1 x PCI-e x16, 2 x PCI-e x4
Display	Intel® 6th Gen. CPU Integrated VGA + HDMI + DP	Intel® 6/7th Gen. CPU Integrated VGA + HDMI + DP
Resolution	VGA: 2048 x 1536 @ 50Hz HDMI: 4096 x 2160 @ 24Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz	VGA: 2048 x 1536 @ 50Hz HDMI: 4096 x 2160 @ 24Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz
Audio	Realtek Audio code Mic-in, Line-in, Line-out 2 x 6W Audio Amplifier	Realtek Audio code Line-in, Mic-in, Line-out 1 x 2W Amplifier
Ethernet	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT
USB/SATA/COM/LAN	12/6/6/2	10/4/10/2
Power Requirement	+12V/+5V/5Vsb/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V
Power Type	AT/ATX	AT/ATX
Operating Temp.	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	12" x 9.6" (304.8 mm x 243.84 mm)	12" x 9.6" (304.8 mm x 243.84 mm)
Weight	1.32 lbs (0.6 kg)	1.32 lbs (0.6 kg)

Micro ATX		
Model Number	ERX-H110KP	ERX-C236KP
Processor	Intel® LGA1151 Socket Supports 6/7th Gen. Core™/Pentium®/ Celeron® Processors (Max. TDP at 95W)	Intel® LGA1151 Socket Supports 6/7th Gen. Intel® Xeon® (Workstation)/Core™, Pentium®/Celeron® Processors (Max. TDP at 95W)
System Chipset	Intel® H110 Chipset	Intel® C236 Chipset
System Memory	2 x 288-pin DDR4 2400MHz DIMM supports up to 32GB	4 x 288-pin DDR4 2400MHz DIMM supports up to 64GB (ECC memory supported by CPU)
Expansion	1 x PCI-e x16, 3 x PCI-e x1, 1 x M.2 Key-A, 1 x SIM card slot, 1 x Full/Half Size Mini-PCIe	1 x PCI-e x16, 1 x PCI-e x4, 2 x PCI, 1 x SIM card slot, 1 x Full Size Mini-PCIe
Display	Intel® 6/7th Gen. CPU Integrated HDMI + VGA, HDMI + DP, VGA + DP	Intel® 6/7th Gen. CPU Integrated HDMI + HDMI, HDMI + VGA, VGA + HDMI
Resolution	VGA: 2048 x 1536 @ 50Hz HDMI: 4096 x 2160 @ 24Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz	VGA: 2048 x 1536 @ 50Hz HDMI 1.4: 4096 x 2160 @ 24Hz, 2560 x 1600 @ 60Hz
Audio	Realtek Audio code Mic-in, Line-in, Line-out 2 x 6W Audio Amplifier	Realtek Audio code Line-in, Mic-in, Line-out 2 x 3W Amplifier
Ethernet	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 3 x Intel® I211AT
USB/SATA/COM/LAN	8/4/6/2	13/6/10/4
Power Requirement	+12V/+5V/5Vsb/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V
Power Type	AT/ATX	AT/ATX
Operating Temp.	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	9.6" x 9.6" (243.84 mm x 243.84 mm)	9.6" x 9.6" (243.84 mm x 243.84 mm)
Weight	1.35 lbs (0.6 kg)	1.35 lbs (0.6 kg)



COM Express Type 10 / Type 6



COM Express Type 10

Model Number	ESM-APLM
Processor	Intel® Pentium®/ Celeron® SoC Processor
System Memory	1 x 204-pin DDR3L 1866 SO-DIMM up to 8 GB
Expansion	1 x PCIe x4
USB	6 x USB 2.0 2 x USB 3.0
SATA	2 x SATA III
COM Port	N/A
MIO	1 x SMBus 1 x LPC
Display Chipset	Apollo lake SoC integrated Graphics
Display	LVDS, DDI
Audio	Intel® High Definition Audio
Ethernet	1 x Intel® WGI211AT
Power Requirement	+4.75V ~ +20V
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	3.31" x 2.17" (84mm x 55mm)
Certification	CE, FCC Class B

COM Express Type 6 - Compact Module

ESM-KBLU	ESM-SKLU	ESM-APLC	ESM-BYT2
7th Gen Intel® Core™ i7/i5/i3/Celeron® processor	6th Gen Intel® Core™ i7/i5/i3/Celeron® processor	Intel® Pentium®/ Celeron® SoC Processor	Intel® Atom™/Celeron® processor
2 x 260-pin DDR4 2133MHz SO-DIMM up to 32 GB	2 x 260-pin DDR4 2133MHz SO-DIMM up to 32 GB	1 x 204-pin DDR3L 1866 SO-DIMM up to 8 GB	2 x 204-pin DDR3L 1600MHz SO-DIMM or 204-pin DDR3L 1333MHz SO-DIMM up to 4 GB (Processor E3845 & J1900 only support 1333MHz)
8 x PCIe x1	8 x PCIe x1	3 x PCIe x1	3 x PCIe x1
8 x USB 2.0 4 x USB 3.0	8 x USB 2.0 4 x USB 3.0	8 x USB 2.0 4 x USB 3.0	7 x USB 2.0 1 x USB 3.0
3 x SATA III	4 x SATA III	2 x SATA III	2 x SATA II
2 x UART	2 x UART	1 x UART	2 x UART
1 x SMBus 1 x LPC 1 x I²C 1 x SPI	1 x SMBus 1 x LPC 1 x I²C 1 x SPI	1 x SMBus 1 x LPC 1 x I²C	1 x SMBus 1 x LPC 1 x I²C
Intel® Kabylake SoC integrated Graphics	Intel® Skylake Processor integrated Graphics	Apollo lake SoC integrated Graphics	Intel® Valleyview SoC integrated Graphics
VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI
Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® Valleyview SoC integrated
1 x Intel® I219LM	1 x Intel® I219LM	1 x Intel® WGI211AT	1 x Intel® I211AT
+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V
0°C ~ 60°C (32°F ~ 140°F) Extend: -20°C ~ 70°C (-4°F ~ 158°F) on request	-20°C ~ 80°C (-4°F ~ 176°F) Extend: -20°C ~ 70°C (-4°F ~ 158°F) on request	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F) (Standard) Extend: -40°C ~ 85°C (-40°F ~ 185°F) on request
3.7" x 3.7" (95 mm x 95 mm)	3.7" x 3.7" (95 mm x 95 mm)	3.7" x 3.7" (95 mm x 95 mm)	3.7" x 3.7" (95 mm x 95 mm)
CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B

COM Express Type 6 - Basic Module

Model Number	ESM-CFH	ESM-KBLH	ESM-KBLA	ESM-SKLH	ESM-SKLA	ESM-BYT
Processor	9/8th Gen Intel® Xeon®/ Core™ i7/i5/i3 processor	7th Gen Intel® Core™ i7/i5/i3 processor	7th Generation Intel® Xeon® E3-1505M v6/ E3-1505L v6 processor	6th Gen Intel® Core™ i7/i5/i3 processor	6th Gen Intel® Xeon®/ Core™ i3 processor	Intel® Atom™/Celeron® processor
System Memory	3 x 260-pin DDR4 2400/2133MHz SO-DIMM up to 96 GB	2 x 260-pin DDR4 2400/2133MHz SO-DIMM up to 32 GB	2 x 260-pin DDR4 2400/2133MHz SO-DIMM up to 32 GB	2 x 260-pin DDR4 SO-DIMM up to 32GB	2 x 260-pin SODIMM DDR4 SDRAM slot up to 32GB, CM236 Support ECC Function	2 x 204-pin DDR3L 1066MHz SO-DIMM (for Bay trail-I E3826/ E3825/E3815) or 204-pin DDR3L 1333MHz SO-DIMM up to 8 GB (E3845 & J1900 only support 1333MHz)
Expansion	1 x PCIe x16 Gen3 8 x PCIe x1	8 x PCIe x1	8 x PCIe x1	8 x PCIe x1	8 x PCIe x1	3 x PCIe x1
USB	8 x USB 2.0 4 x USB 3.1	8 x USB 2.0 4 x USB 3.0	8 x USB 2.0 4 x USB 3.0	8 x USB 2.0 4 x USB 3.0	8 x USB 2.0 4 x USB 3.0	7 x USB 2.0 1 x USB 3.0
SATA	4 x SATA III	4 x SATA III	4 x SATA III	4 x SATA III	4 x SATA III	2 x SATA II
COM Port	2 x UART	2 x UART	2 x UART	2 x UART	2 x UART	1 x UART
MIO	1 x SMBus 1 x LPC 1 x I²C 1 x SPI	1 x SMBus 1 x LPC 1 x I²C	1 x SMBus 1 x LPC 1 x I²C	1 x SMBus 1 x LPC 1 x I²C	1 x SMBus 1 x LPC 1 x I²C	1 x SMBus 1 x LPC 1 x I²C
Display Chipset	Intel® Coffee Lake Processor integrated Graphics	Intel® Kabylake SoC integrated Graphics	Intel® Kabylake SoC integrated Graphics	Intel® Valleyview SoC integrated Graphics	Intel® Valleyview SoC integrated Graphics	Intel® Valleyview SoC integrated Graphics
Display	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI
Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® Valleyview SoC integrated
Ethernet	1 x Intel® I219LM	1 x Intel® I219LM	1 x Intel® I219LM	1 x Intel® I219LM	1 x Intel® I219LM	1 x Intel® I211AT
Power Requirement	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V
Operating Temperature	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)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F) (Standard) Extend: -40°C ~ 85°C (-40°F ~ 185°F) on request
Dimension (L x W)	5" x 3.7" (125 mm x 95 mm)	5" x 3.7" (125 mm x 95 mm)	5" x 3.7" (125 mm x 95 mm)	5" x 3.7" (125 mm x 95 mm)	5" x 3.7" (125 mm x 95 mm)	5" x 3.7" (125 mm x 95 mm)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B



ARM-based SBC

Qseven Module



ARM-based SBC

Model Number	RSC-IMX8M	RSC-IMX61	ACP-IMX6POS	RSC-BCX6
Processor	NXP i.MX8M Cortex-A53 Quad Core 1.3GHz; Cortex-M4 core processor	NXP i.MX 6 Dual Lite NXP i.MX 6 Quad Core	NXP i.MX 6 Dual Lite NXP i.MX 6 Quad Core	NXP i.MX 6 Solo
System Memory	2GB DDR4	1GB DDR3 expandable to 2 GB	1GB DDR3 (Dual Lite) 2GB DDR3 (Quad Core) expandable to 2 GB	512 MB DDR3 expandable to 1 GB
Storage	8GB eMMC	eMMC 4GB	eMMC 4GB	N/A
External I/O Connector	1 x USB 3.0 Type A (Vertical type) 1 x USB 3.0 Type C 2 x Gigabit LAN 1 x HDMI (Vertical type) 1 x Micro SD socket 1 x Hand Phone 1 x Reset 1 x Power LED (Green)	1 x USB2.0 Type A (Double deck) 1 x HDMI with screw lock 1 x 10/100/1000 LAN Optional Powered LAN support (IEEE 802.3at), 1 x Micro SD socket, 1 x Jack for I/R extender cable, co-design (Optional) with on board I/R sensor (Optional)	1 x USB2.0 Type A x2 (Double deck) 1 x 10/100/1000 LAN Optional 2nd 1 x 10/100/1000 LAN (RJ45x1), 1 x HDMI Connector (Vertical Type) 1 x Mini USB Connector 1 x RJ11 Connector for Cash Drawer 2 x DB9 Male Connector (COM 1 & 2 can be select from RS232/422/485) 1 x DC 12V Power Input by Power DC Jack 1 x Micro SD socket	1 x Line-Out 2 x USB 2.0 1 x Micro USB Connector (USB OTG) 1 x HDMI 1 x RJ-45 1 x Barrel Type Connector 1 x DC-in Jack
Internal I/O Connector	1 x Front Panel 2 x MIPI CSI, 1 x MIPI DSI 1 x DC in 1 x LVDS, 1 x Black Light 1 x I ² C, 1 x USB 2 x M.2 socket 1 x SIM Socket 1 x Extend connector	1 x USB2.0, 1 x USB OTG 1 x 2x5 GPIO, 1 x LVDS 24bit x2 1 x Backlight control 1 x Line-out, speaker-out Mic-in, 1 x Mini-PCIe (half size) 1 x I ² C, 1 x SATA (i.MX6 Quad only) 1 x Battery connector for RTC 1 x debug port, 1 x RS232	2 x RS232, 1 x debug port 1 x LVDS 24bit x2, 1 x Backlight control 1 x VGA, 1 x I ² C 3 x USB pin header 1 x 5-wire Resistive Touch Interface 1 x Dual Channel 24-bit LVDS 1 x Stereo Speaker-out 1 x Mini PCIe (Full size) 1 x SIM Socket 1 x Front Panel Connector with Power Button & Indicate LED for Power & WIFI 1 x Battery connector for RTC	1 x LVDS, 1 x Backlight control 1 x USB 2.0, 1 x RS232 1 x 8 bits GPIO 1 x Front Panel, 1 x Battery connector for RTC 1 x I ² C, 1 x CAN Bus, 1 x Mic-in, 1 x Line-out (Optional), 1 x Micro SD socket 1 x Mini PCIe (Half size) 1 x SIM Socket
Power Requirement	12 ~ 24V DC input, Terminal block	12 ~ 26V DC input, 2.5mm DC Jack, typical 19V input With brownout detection or Powered LAN	12 ~ 24V DC input	5V DC input
Operating Temperature	-40°C ~ 85°C (-40°F ~ 185°F)	-20°C ~ 85°C (-4°F ~ 185°F)	A Version 0°C ~ 60°C (32°F ~ 140°F) B Version -20°C ~ 85°C (-4°F ~ 185°F)	0°C ~ 60°C (32°F ~ 140°F)
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)	-40°C ~ 85°C	-40°C ~ 85°C (-40°F ~ 185°F)	-20°C ~ 80°C (-4°F ~ 176°F)
Dimension (L x W)	146 mm x 102 mm	146 mm x 102 mm	175 mm x 110 mm	120 mm x 78 mm
Weight	0.15 kg	0.15 kg	0.16 kg	0.1 kg
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class A
Software Support	Android 9.0 Yocto 2.5	Android 4.4 / 6.0 Yocto 2.1	Android 4.4 Ubuntu 14.04 Yocto 1.7	Android 4.3, 4.4 and 5.0 can be supported if upgraded to 1G DDR3 memory Linux Ubuntu 14.04 Linux Yocto 1.7

Qseven Module

Model Number	EQM-APL	EQM-BYT	EQM-BYT2	RQM-IMX6
Processor	Intel® Pentium®/ Celeron® processor	Intel® Atom™/ Celeron® processor	Intel® Atom™ Processor (E3825/ E3845)	NXP i.MX 6 Solo/ Quad
System Memory	Onboard DDR3L 4GB, up to 8GB	Onboard DDR3L 2GB up to 4 GB (Processor E3845 only support 1333MHz)	2GB DDR3 (E3825) 4GB DDR3 (E3845)	1GB RAM (Solo) 1GB RAM (Quad)
Expansion	3 x PCIe1	3 x PCIe1	3 x PCIe1	3 x PCIe1
USB	6 x USB 2.0, 2 x USB 3.0	5 x USB 2.0, 1 x USB 3.0	5 x USB 2.0, 1 x USB 3.0	4 x USB 2.0, 1 x USB OTG
SATA	2 x SATA III	2 x SATA II	2 x SATA II	1 x SATA II (Quad only)
UART	1 x UART	1 x UART	1 x UART	1 x UART
MIO	1 x SMBus, 1 x LPC, 1 x I ² C, 1 x SPI	1 x LPC, 1 x SMBus, 1 x I ² C	1 x LPC, 1 x SMBus, 1 x I ² C	3 x I ² C
Display Chipset	Apollo lake SoC integrated Graphics	Intel® Valleyview SoC integrated Graphics	Intel® Valleyview SoC integrated Graphics	NXP
Display	(HDMI or DP) + (eDP or LVDS)	DDI (HDMI or DP) + LVDS	DDI (HDMI or DP) + LVDS	1 x HDMI/ LVDS
Audio	Intel® Apollo lake SoC integrated	Intel® Valleyview SoC integrated	Intel® Valleyview SoC integrated	Supports I ² C interface
Ethernet Chipset	1 x Intel® I210 (N4200/N3350) Industrial 1 x Intel® I211 (N4200/N3350) commercial	1 x Intel® I211 (commercial)	1 x Intel® I210 for Industrial 1 x Intel® I211 for commercial	1 x KSZ9031
Power Requirement	+5V	+5V	+5V	+5V
Others	N/A	N/A	N/A	Support Mipi CSI Camera
Operating Temperature	0°C ~ 70°C (32°F ~ 140°F) (Standard) Extend: -20°C ~ 70°C (-4°F ~ 158°F) on request	0°C ~ 60°C (32°F ~ 140°F) (Standard)	0°C ~ 60°C (32°F ~ 140°F) (Standard) -40°C ~ 85°C (-40°F ~ 185°F) (Extended)	0°C ~ 60°C (32°F ~ 140°F) (Standard) -40°C ~ 85°C (-40°F ~ 185°F) (Extended)
Dimension (L x W)	2.8" x 2.8" (70 mm x 70 mm)	2.8" x 2.8" (70 mm x 70 mm)	2.8" x 2.8" (70 mm x 70 mm)	2.8" x 2.8" (70 mm x 70 mm)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B
Software Support	Win 10 Linux Android	Win 10 Win 7 Win 8 Linux	Ubuntu 12.04 Win 7/ 8.1/ 10	Android 6.0 Yocto 2.1



SMARC / SMARC Eval Carrier Board

Qseven Carrier Board / Eval Carrier Board



SMARC		
Model Number	SMA-X8I	SMA-IMX6
Processor	NXP i.MX 8M Mini	NXP i.MX 6 Solo NXP i.MX 6 Dual Lite NXP i.MX 6 Dual NXP i.MX 6 Quad Core
System Memory	1GB DDR3	1GB DDR3 expandable to 2 GB
Storage	eMMC 8GB	eMMC 4GB
External I/O Connector	1 x USB 2.0 Port (One OTG) 1 x I ² C 1 x I ² S 1 x SPI 1 x GPIO 1 x UART 1 x MIPI CSI 1 x MIPI DSI 1 x LVDS 3 x PCIE 4 x USB 2.0 1 x Giga Lan	2 x USB 2.0 Port (One OTG) 2 x RX/TX (Ser1/3) 2 x UART (Ser0/2) 3 x PCIe1 1 x MLB150 12 x GPIOs, 1 x SDIO, 1 x SATA eMMC, 2 x SPI, 3 x I ² C, 1 x SPDIF, 1 x WDT, 2 x CAN, 1 x JTAG
Internal I/O Connector	N/A	N/A
Power Requirement	12~24V	3V to 5.25V - Operates Directly from Single Level Lithium Ion Cells, or Fixed 3.3V or 5V Power Supplies
Operating Temperature	Optional Commercial Temperature: 0°C ~ 85°C (32°F ~ 185°F) Industrial Temperature: -40°C ~ 85°C (-40°F ~ 185°F)	Optional Commercial Temperature: 0°C ~ 60°C (32°F ~ 140°F) Industrial Temperature: -40°C ~ 85°C (-40°F ~ 185°F)
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)	-40°C ~ 85°C (-40°F ~ 185°F)
Dimension (L x W)	82 mm x 50 mm	82 mm x 50 mm
Weight	0.06 kg	0.06 kg
Certification	CE, FCC Class B	CE, FCC Class B
Software Support	Android 9.0 Yocto 2.5	Android 4.4 Ubuntu 12.04 Yocto 2.0

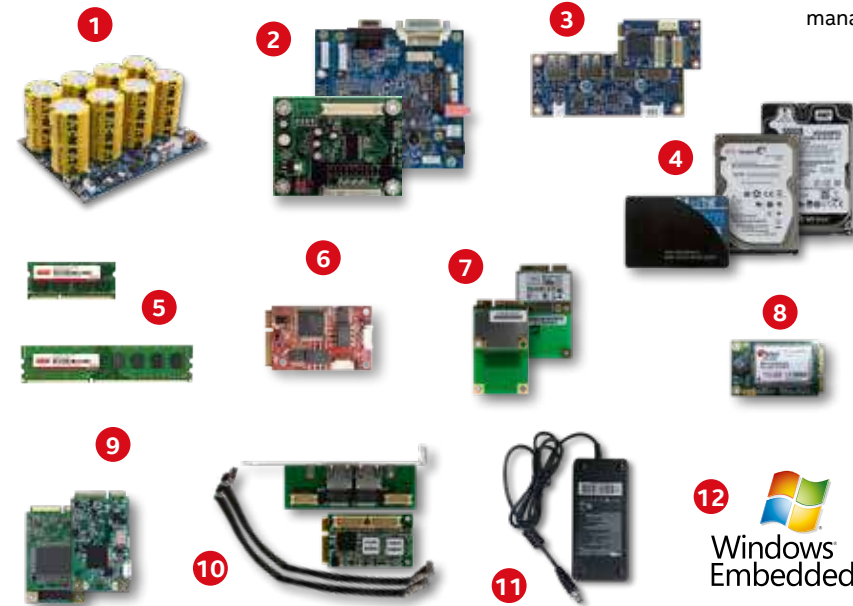
SMARC Eval Carrier Board		
REV-SA01	REV-SA02	REV-SA03
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
1 x HDMI, 1 x VGA, 2 x RJ45, 1 x DB9, 1 x Mini-USB, 2 x USB Type A	1 x LAN, 2 x RCA, 1 x Micro SD socket, 1 x Mini USB (OTG), 1 x USB Type A 2.0 double deck, 1 x HDMI, 1 x VGA, 1 x Display port, 2 x RS232, 1 x RST Switch, 1 x Power Switch, 1 x Power LED , 1 x DIP SW	1 x Power Key 1 x Reset Key 1 x DC Jack 1 x USB 2.0 Type A 1 x USB Type C 1 x Giga Ethernet 1 x Headphone 1 x Micro SD Socket 1 x SIM Socket
1 x LVDS, 1 x Backlight, 1 x SD Socket, 1 x USB Connector, 2 x CAN BUS, 1 x Speaker-out/Mic-in, 1 x RS-232, 1 x GPIO, 1 x SATA, 1 x RTC Battery, 1 x 2 Cell Li Battery Connector	1 x Camera, 2 x Speaker, 1 x D-MIC, 1 x Mini PCIe (SATA), 1 x Mini PCIe (USB), 1 x Sim Card , 1 x GPIO, 1 x I ² C, 1 x USB2.0, 1 x PCIe-1, 1 x LVDS, 1 x Battery charger connect, 1 x Inverter, 2 x RS485, 2 x CAN	1 x USB 2.0 4P Header 1 x Mic Phone 2P Header 1 x Speaker 2P Header 1 x RTC-Battery (CR2032) 1 x M.2 key E for WIFI /BT 1 x M.2 key B for LTE 1 x M.2 key M for SSD 1 x BackLight 4P Header 1 x I2C Touch Screen connector 1 x MIPI DSI Screen connector 1 x MIPI CSI Screen connector 1 x LVDS Screen connector 1 x GPIO 16 bit 1 x CAN Bus
+9V ~ 36V DC-in (REV-SA01-02-A1R) +9V ~ 24V DC-in (REV-SA01-03-A1R)	DC +12V	DC +12V
0°C ~ 60°C (32°F ~ 140°F)	-40°C ~ 85°C (-40°F ~ 185°F)	-40°C ~ 85°C (-40°F ~ 185°F)
-20°C ~ 80°C (-40°F ~ 176°F)	-40°C ~ 85°C (-40°F ~ 185°F)	-40°C ~ 85°C (-40°F ~ 185°F)
146 mm x 101 mm	170 mm x 170 mm	165 mm x 120 mm
0.13 kg	0.024 kg	0.024 kg
CE, FCC Class B	CE, FCC Class B	CE, FCC Class B
N/A	N/A	N/A

Qseven Carrier Board	
Model Number	REV-Q703 (A/B)
USB	4 x USB 2.0, 2 x USB 3.0 (2 x USB on board, 2 x USB 3.0/ 1 x USB external)
SATA	2 x SATA (On board)
COM Port	1 x RS-232
Video	1 x HDMI, 1 x LVDS, 1 x DP, 1 x eDP (1 x LVDS & 1 x eDP on board)
Other	External I/O Connector 1 x Ethernet, 1 x SD socket, 3 x Audio phone jack Internal I/O connector 1 x GPIO, 1 x PCIe x1, 1 x mPCIe, 1 x SPI, 1 x CAN, 1 x LPC, 1 x JFP (Miscellaneous Setting Connector), 1 x PWM CPU Fan Header 1 x PWR Header
DIO	1 x 16 bit GPIO
MIO	1 x SD socket for version A 1 x Micro SD socket for version B
Expansion	1 x Mini PCIe Supports SIM Card
Audio Chipset	ALC892/ WM8962
Audio Interface	Mic-In, Line-In, Line-Out
Power Requirement	DC +12V
Operating Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Dimension (L x W)	6.69" x 6.69" (170 mm x 170 mm)
Certification	CE, FCC Class B

Eval Carrier Board		
EEV-EX16-B1	EEV-EX15	EEV-EX14
4 x USB 2.0, 4 USB 3.2 (Gen2/10Gbps)	8 x USB 2.0, 2 x USB 3.0 (2 USB External)	8 x USB 2.0, 4 x USB 3.0 (4 USB External)
4 x SATA III (On Board)	2 x SATA III (On Board)	4 x SATA II (On Board)
N/A	N/A	1 x RS-232/422/485, 1 x RS-232, 1 x LPT (1 x RS232/422/485 external, 1 x RS232 on board)
3 x Display Port, 1 x VGA, 3 x HDMI, 1 x LVDS (1 x LVDS on board) 1 x eDP	1 x Display Port, 1 x HDMI, 1 x LVDS (1 x LVDS on board)	1 x Display Port, 1 x HDMI, 1 x LVDS (1 x LVDS on board)
1 x SDIO 1 x LAN (support 2.5G)	1 x LAN	1 x PS2/ KB & MS, 1 x SDIO, 2 x LAN
1 x 8bit GPIO	1 x 8bit GPIO	1 x 8bit GPIO
N/A	N/A	1 x IrDA
2 x PCIe Slot x4 1 x PCIe x16 1 x IET 1 x SDIO/DIO (optional, depend on module board)	1 x PCIe x4 1 x IET 1 x SDIO/DIO (optional, depend on module board)	1 x PCIe x16 1 x PCIe x4 1 x PCIe x1 1 x Express Card 1 x Mini PCIe
ALC892	ALC892	ALC892
Mic-In and Line-Out	Mic-In and Line-Out	Mic-In, Line-In and Line-Out
ATX	ATX	AT/ATX
0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
9.6" x 9.6" (243.84 mm x 243.84 mm)	6.7" x 6.7" (170 mm x 170 mm)	9.6" x 9.6" (243.84 mm x 243.84 mm)
CE, FCC Class B	CE, FCC Class B	CE, FCC Class B

Peripherals & Accessories

Avalue provides a variety of Peripherals to expand your computing experience and capability. These products are made compatible with our wide range of Embedded platforms and Motherboards. Our designed Modules, Cards and Converter Boards offer unlimited capability, however not limited to Power monitoring & management, signal transmission and Display.



Peripherals & Accessories

	Embedded Peripherals	Description
1	Power Board	EPM-1718 60W DC to DC Marine Power Module EPM-1715 Super Cap Power Module
2	Display Board	EPM-1525 VGA/DVI to TTL/LVDS Scalar Module EPM-1530 18/24 bit LVDS Receiver Module
3	IO Board	EPM-1601 mPCIe to 4-RS-232 Module EPM-1602 mPCIe to 4-RS-422/485 Module EPM-1603 USB to 4-RS-232/422/485 Module EPM-1604 4 Port USB 2.0 Hub EPM-1605 USB to mPCIe Module EPM-1606 mPCIe to M.2 Transfer Board
4	Industrial Storage	SSD: 2.5", mSATA, M.2, CFAST, CF, DOM HDD: 2.5", 3.5"
5	Industrial Module	Type: SO-DIMM, Long-DIMM Capacity: Max. Up to 32GB Temperature: Standard or Industrial temperature
6	CANBus Module	Form Factor: mPCIe Dual Channel CAN 2.0B Wide temperature: -40° to 85°C
7	Wi-Fi Module	Form Factor: mPCIe/ M.2 Bluetooth supported
8	3G/4G/5G Module	Type: 3G/ 4G / 5G Module Interface: mCPIE, M.2
9	Capture Card	Mini SDI/HDV capture card w/H.264 High Profile encoding
10	Mini LAN Port	2-port 10/100/1000 Ethernet board
11	Power Adapter	AC DC Adapter 60W/84W/120W
12	Microsoft Windows Embedded OS	Avalue provides Embedded Software to customers who integrated Avalue's hardware products. Windows Embedded Stardard 7/8 Window 10 IoT Enterprise

EPM-1601

- mPCIe to 4 -RS-232 Module
- Input Interface PCI-Express, 2.0
 - Output Interface 4 x RS-232
 - Industrial temperature (W/T temp. -40°C to 85°C) operation
 - Support Ring Wake function (optional)

EPM-1602

- mPCIe to 4 -RS-422/485 Module
- Input Interface PCI-Express, 2.0
 - Output Interface 4 x RS-422/285
 - Industrial temperature (W/T temp. -40°C to 85°C) operation
 - Support auto flow control
 - Cable for mPCIe to four DB-9 connectors

EPM-1603

- USB to 4 -RS-232/422/485 Module
- Input Interface USB2.0
 - Output Interface 4 x RS232/422/485
 - 2 x USB 2.0 w/type A connector
 - Industrial temperature (W/T temp. -40°C to 85°C) operation

EPM-1604

- 4 -Port USB 2.0 Hub
- 4 x Port USB Hub, open bare-board design
 - 4 x Internal USB2.0 type A female connector for down port
 - 1 x Internal wafer 2pin connector for DC-input (+12V, Max 1A)
 - Compliant with Universal Serial Bus Specification Revision 2.0 (Data Rate 1.5/12/480 Mbps), USB1.1 compatible

EPM-1715

- Supercap Power Module
- 500'000 Charge & Discharge Cycling
 - 4 x 400F Supercapacitor up to 6-Cell and 8-Cell
 - AP for the Parameter Selecting
 - Wide Temperature Range: 0°C ~ +60°C
 - Wide DC Input: +12~24Vdc
 - Over Temperature Protection

EPM-1718

- Marine 60W Power Module
- 60W Marine Power Board w/IEC 60945 Certified
 - Wide DC Input Range: +9 ~ 36Vdc; DC Output: +12Vdc
 - Supports Over voltage/current protection
 - Input to Output Isolation: 1500Vdc
 - Operating Temperature Range: -40°C ~ 85°C
 - Dimension: 100mm x 80mm

Monitoring Video Wall

Multi-display can connect up to 7 displays at the same time. Also, it can switch flexible either in 7 pieces or 1 large display.

Transportation

Commercial Video Wall

Multi-display can build a spectacular video wall, providing various methods showing their commercial with high resolution display.

Retail

Automated Optical Inspection

GPU accelerated empower the computer from the image and video dealing capability, helping speed up the examination in factory.

Factory

Managing Monitoring

Monitoring center can monitor the real-time status in the factory, it can also display in one large screen to create an easier security environment.

Factory

GPU Usage Case



GPU Solution - Board

Model Number	EEV-MX01
Expansion	1 x Full size Mini PCIe (1-PCIex1, 1-USB2.0, 1-SIM Slot) 1 x Key-B (3042/2242/2260/2280, 2-PCIex1, 1-USB 2.0, 1-SATAIII, 1-SIM Slot) 1 x Key-E (2230, 1-PCIex1, 1-USB 2.0)
Storage	1 x Key-B (2242/2260/2280) 2 x SATA III (7-Pin)
USB	4 x USB 3.2 Gen1
SATA	2 x SATA III
COM Port	2 x RS-232
DIO	1 x 8bit GPIO 1 x 16bit GPIO
Other	7 x HDMI 2 x LAN 1 x Mic-In (Audio Jack) 1 x Line-Out (Audio Jack)
Display Resolution	HDMI: Max.resolution 3840 x 2160 @ 30Hz Reflects the CPU and GPU Graphic engines
Multiple Display	7 Display: 7 x HDMI
Ethernet Chipset	1 x Intel® I210IT 1 x LAN Chipset from COM Express®
Ethernet Interface	2 x RJ-45 10/100/1000 Base-Tx GbE compatible
Power Requirement	+12V
ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 5.0 Compliant
Power Type	AT/ATX
Operating Temperature	EEV-MX01 Industrial: -40°C ~ 75°C (-40°F ~ 167°F) With General MXM Card 0°C 50°C With Wide-Temp. MXM Card -20°C 70°C
Storage Temperature	-40°C ~ 75°C (-40°F ~ 167°F)
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Dimension (L x W)	8.6" x 8.26" (220mm x 210mm)
Weight	0.041lbs(0.03kg)
Vibration Protection	With SSD: 5Grms, IEC 60068-2-64, Random, 10 ~ 500Hz, 30min/Axis, 3 Axis
Certification Information	CE, FCC Class A
OS Information	According to COMe Module Spec.

GPU Solution - System

Model Number	EGS-MX1
Board	EEV-MX01+ESM-CFH MXM (Optional)
Processor	i7-9850HE, i5-8400H, i3-9100HL
System Memory	3 x 260-pin DDR4 2400/2133 SO-DIMM up to 96 GB
Expansion	1 x M.2 Key-B 2242/3042/2260/2280 (SATA/PCIe/USB2.0) 1 x M.2 Key-E 2230 for Wi-Fi & BT Module (PCIe/USB2.0) 1 x Full/Half Size mini PCIe (PCIe/USB2.0) 1 x Type A/B MXM Slot
Storage	1 x 2.5" internal Drive Bay 1 x M.2 Key-B 2242/2260/2280
USB	4 x USB 3.1 Gen.2(10Gbp/s)
COM Port	2 x RS-232
Other	2 x SIM Card Slot (Internal) 4 x Antenna with dust cover
DIO	1 x 8/16-Bit GPIO
Display Chipset	Intel® Coffee Lake Processor Integrated Graphics (UHD 630) MXM GPU Graphics
Display Resolution	3 x HDMI 1.4: 4096 x 2160 @30Hz (from COMe) 4 x HDMI 2.0b: 4096 x 2160 @ 60Hz (from MXM)
Audio Chipset	Realtek ALC892 HD codec
Audio Interface	1 x Mic-In, 1 x Line-Out
Ethernet Chipset	1 x Intel® I210IT 1 x Intel® I219LM
Ethernet Interface	2 x RJ45
Power Connector	10-pin connector
Power Requirement	+12Vdc (±5%)
ACPI	Single power ATX Support S0,S3, S4, S5 ACPI 5.0 Compliant
Power Mode	ATX/AT mode, default set as ATX
Adapter	Optional 240W, 12V/20A, AC/DC Adapter
Construction	Metal
Dimension (L x W x H)	240mm x 240mm x 85mm
Operating Temperature	(w/SSD), ambient w/ air flow 0°C ~ 50°C (32°F ~ 122°F)
Certification Information	CE/FCC Class A

Transportation System

- Wide Range DC Power Input from 9 ~ 36V
- Wide Temp: -40~75 degrees.
- Power Management (ignition control) and Low Voltage Protection Design
- GPS/4G/5G/Wifi communication
- MIL-STD-810G/H/ E-mark/ ISO7637-2/ IEC 60945 certified
- Fanless and Ruggedized design



Smart Bus and Bus Stop

Description: The bus gateway is an embedded control unit, which can listen to all of the messages on the bus and transfers them to the central system.

Features: Offer rich I/O interfaces which are designed to connect with external devices in vehicle and support powerful CPU performance.



Garbage Truck

Description: Garbage collection within a certain street block, furthermore to collect the Bill by RFID, also acting as a gateway in vehicle.

Features: Power management for autonomous garbage truck usage which optimizes the on/off status through the control system easily.



AGV in Factory/ Warehouse

Description: AGV into a unmanned factory, manufacturing processes helps improve output, resulting increases and greater efficiency.

Features: Using the camera to detect and avoid obstacles, meanwhile making a communication between vehicles.



Maritime

Description: Control unit equipped in the navigation bridge and allow multi-devices to connect with. Furthermore, expansion slots could install wifi/LTE module to communicate with control center.

Features: The gateway controller in the ship with IEC 60945 Certification, and complies with marine standards including DNV ABS, NK, CCS...Etc. It also provides isolated serial ports and wide range power input voltage.



Transportation System (Marine)

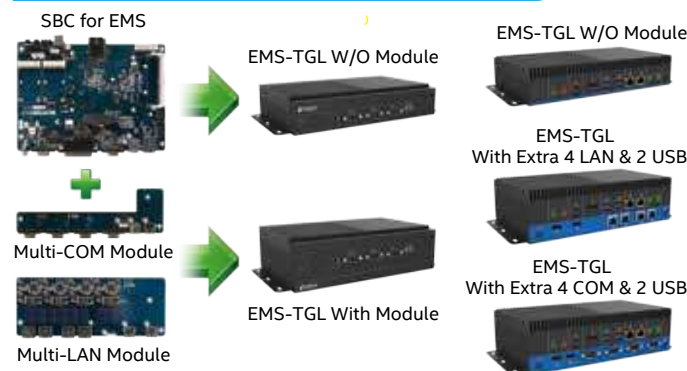
Model Number	EMS-SKLU-Marine
Board	EBM-SKLUS + AUX-M07
Processor	i7-6600U, i5-6300U, i3-6100U, Celeron 3955U
System Memory	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB
Expansion	1 x M.2 Key B, Size 2242/ 3042 (SATA/ PCIe/ USB3.0) 1 x Mini PCIe
Storage	1 x 2.5" Drive Bay, 1 x M.2 (SATA)
USB	4 x USB 3.0, 2 x USB 2.0
COM Port	2 x RS-232/422/485 (Jumper) 4 x RS-232/422/485 (BIOS, 2.5KV isolation)
Other	2 x SIM Card Slot, 1 x SMBus, 2 x PS2/ KB & MS 2 x Antenna mounting w/ cover
DIO	1 x 12-bit GPIO
Display Chipset	Intel® HD Graphics 520/ 510
Display Resolution	DP: Max. resolution 4096x2304 @ 60Hz
Audio Chipset	Realtek Audio code
Audio Interface	Mic-In, Line-In and Line-Out
Ethernet Chipset	2 x Intel® I211AT
Ethernet Interface	2 x RJ45
Power Requirement	Typical 12/24Vdc (+9V ~ +36V) TVS component for surge protection
ACPI	Single power ATX Supports S0, S3, S4, S5; ACPI 5.0 Compliant
Power Mode	AT/ATX (ATX is the default setting)
Dimension (L x W x H)	9.45" x 5.96" x 2.95" (240 x 151.5 x 75 mm)
Operating Temperature	(w/SSD), ambient w/ air flow -20°C ~ 60°C (-4°F ~ 140°F)
Certification Information	CE, FCC Class A, IEC 60945

Transportation System (Vehicle)

VMS-CFS	VMS-CFS-PSE	VMS-APL	VMS-BYT
EBM-CFSV	EBM-CFSV+AUX-M04	EBM-APLV	EBM-BYTV
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	N4200, N3350, x7-E3950, x5-E3940, x5-E3930	E3845
Intel® CNL PCH-H Q370	Intel® CNL PCH-H Q370	1 x 204-Pin DDR3L 1866MHz SO-DIMM up to 8 GB	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB
1 x Avalue 80-Pin IET Interface 1 x Full Size Mini PCIe w/ SIM Slot 1 x M.2 Key-E 2230 2 x M.2 Key-B 2242/3042/2280 w/ SIM Slot 1 x CANBus Module Interface (UART)	1 x Full Size Mini PCIe w/ SIM Slot 1 x M.2 Key-E 2230 2 x M.2 Key-B 2242/3042/2280 w/ SIM Slot 1 x CANBus Module Interface (UART)	1 x Avalue 80-Pin IET Interface 1 x Full Size Mini PCIe (PCIe + USB w/ SIM Slot) 1 x Full Size Mini PCIe (PCIe + USB w/ SIM Slot) 1 x CANBus module Interface (UART)	1 x Avalue 80-Pin IET Interface 1 x Bluetooth Interface 1 x CAN module Interface 2 x Mini PCIe
2 x 2.5" Drive Bay (Front Access) 2 x M.2 Key-B SSD (2242/2280)	2 x 2.5" Drive Bay (Front Access) 2 x M.2 Key-B SSD (2242/2280)	1 x 2.5" Drive Bay (SATA III) 1 x M.2 (SATA III, 2242) 1 x SD (3.0)	1 x 2.5" Drive Bay 1 x CFast™ or mSATA
6 x USB 3.1	6 x USB 3.1, 2 x USB 2.0	4 x USB 3.0	2 x USB 2.0, 1 x USB 3.0
1 x RS232, 2 x RS-232/422/485	1 x RS232, 2 x RS-232/422/485	2 x RS-232/422/485 (Jumper)	2 x RS-232/422/485 (BIOS)
1 x DC-Out (12V/4A) 3 x SIM Card Slot (External Accessible) 5 x Antenna Mounting with Dust Cover	3 x SIM Card Slot (External Accessible) 5 x Antenna Mounting with Dust Cover	1 x DC-Out (12V/6A) 2 x SIM Card Slot (External Accessible) 5 x Antenna Mounting with Dust Cover	1 x DC-Out (12V/4A), 5 x Knockouts for Antenna Mounting
1 x 8-Bit GPIO, w/ 1.5KV isolation	1 x 8-Bit GPIO, w/ 1.5KV isolation	1 x 8-Bit GPIO	1 x 8-bit GPIO
Intel® UHD Graphics 630/610	Intel® UHD Graphics 630/610	Intel® HD Graphics 505/500	Intel® HD Graphics for Intel® Atom® Processor Z3700 Series
DP 1.2: 4096 x 2160 @ 60Hz w/HDR HDMI 1.4: 4096 x 2160 @ 30Hz LVDS: 1920 x 1200 @ 60Hz, supports 2 channels 18/24-bit	DP 1.2: 4096 x 2160 @ 60Hz w/HDR HDMI 1.4: 4096 x 2160 @ 30Hz LVDS: 1920 x 1200 @ 60Hz, supports 2 channels 18/24-bit	DP: Max. Resolution 4096 x 2160 @ 60Hz LVDS: Max. Resolution 1920 x 1200 @ 60Hz	VGA: Max. resolution 2560 x 1080 @ 60Hz LVDS: Max. resolution 1600 x 1200 @ 60Hz
Realtek Audio code	Realtek Audio code	Realtek Audio code	Realtek Audio code
2 x Mic-In, 2 x Line-Out	2 x Mic-In, 2 x Line-Out	2 x Mic-In, 2 x Line-Out	2 x Mic-In and 2 x Line-Out
1 x Intel I211-AT GbE Controller, 1 x Intel I219-LM GbE PHY	1 x Intel I211-AT GbE Controller, 1 x Intel I219-LM GbE PHY	2 x Intel® I211AT	2 x Intel® I211AT
2 x RJ45; 4 x Port RJ45/ M12, supports 802.3af PoE (optional)	2 x Port RJ45 (LAN); 4 x Port RJ45/M12 (PoE), supports 802.3af PoE.	2 x RJ45	2 x RJ45
Typical 12/24 Vdc (+9 ~ 36Vdc)	Typical 12/24 Vdc (+9 ~ 36Vdc)	Typical 12/24 Vdc (+9 ~ 36Vdc)	Typical 12/24 Vdc (+9 ~ 36Vdc)
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, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant
AT/ATX (AT is the default setting) Vehicle PC power mode is default setting (JACC1) w/ Vehicle Power Management	AT/ATX (AT is the default setting) Vehicle PC power mode is default setting (JACC1) w/ Vehicle Power Management	AT/ATX (AT is the default setting) Vehicle PC power mode is default setting (JACC1) w/ Vehicle Power Management	AT/ATX (AT is the default setting) Vehicle PC power mode is default setting (JACC1) w/ Vehicle Power Management
8.27" x 9.45" x 4.33" (210 x 240 x 110 mm)	8.27" x 9.45" x 4.33" (210 x 240 x 110 mm)	9.45" x 7.3" x 2.44" (239 x 186 x 62 mm)	9.45" x 7.3" x 2.36" (240 x 186 x 60 mm)
With extended temperature peripherals w/ air flow: -40°C ~ 70°C (-40°F ~ 158°F)	With extended temperature peripherals w/ air flow: -40°C ~ 60°C (-40°F ~ 140°F)	With extended temperature peripherals N4200/N3350: -20°C ~ 70°C (-4°F ~ 158°F) with air flow; E3950/E3940/E3930: -40°C ~ 70°C (-40°F ~ 158°F) with air flow	(w/SSD, mSATA, CFast), ambient w/ air flow -40°C ~ 75°C (-40°F ~ 167°F)
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, E13 Mark, ISO7637-2, IP50 Rating

Sophisticated Design IET Modules

Modularization via IET Module



- Time-Saving Development for New Functions
- Flexible Design to Meet Versatile Requirements
- IET Expansion Module Supporting Multi-COM Isolation, Multi-LAN Bypass and Multi-LAN PoE Module

IET Module Pin Definition

EMS series is an expandable rugged system that can quickly build innovative platform to meet customer's needs.



Expandable Fanless System

Fanless & Easy Maintenance

No Cable
No Trouble



Easy To Install
Any Device



Expansion - Avalue IET Module



Wide Temperature System

Model Number	EMS-TGL	EMS-SKLU	EMS-BYT
Board	EBM-TGLS	EBM-SKLU S	EBM-BYTS
Processor	i7-1185GRE/ i5-1145GRE/ i3-1115GRE i7-1185G7E/ i5-1145G7E/ i3-1115G4E	i7-6600U/ i5-6300U/ i3-6100U/3955U	J1900/ E3845
System Memory	2 x 260-pin DDR4 3200MHz SO-DIMM up to 64GB	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB
Expansion	1 x Avalue 80-Pin IET Module Interface 1 x M.2 Key-B 2242/3042/3052 (SATA/ PCIe/ USB3.1) 1 x M.2 Key-E 2230 for Wi-Fi & BT Module(CNVi)	1 x Avalue 80-Pin IET Module Interface 1 x M.2 Key B, Size 2242/ 3042 (SATA/ PCIe/ USB3.0) 1 x Mini PCIe	1 x Avalue 80-Pin IET Module Interface 2 x Mini PCIe
Storage	1 x M.2 Key-M 2280, support PCIe Gen. III x 4 (NVMe SSD) 1 x M.2 Key-B 2242 (SATA), share with expansion slot	1 x 2.5" Drive Bay 1 x M.2 (SATA)	1 x 2.5" Drive Bay 1 x mSATA
USB	2 x USB 3.1 Gen.2 (10Gbps) 2 x USB 3.1 Gen.1 (5Gbps)	4 x USB 3.0	1 x USB 3.0, 2 x USB 2.0
COM Port	2 x RS-232/422/485 (BIOS), supports auto-flow	2 x RS-232/422/485 (BIOS + DIP Switch), supports auto-flow	2 x RS-232/422/485 (BIOS)
Other	1 x SIM Card Slot (internal) 8 x Antenna with dust cover (6 x LTE+GPS/ 2 x Wifi)	2 x SIM Card Slot, 1 x SMBus, 2 x PS2/ KB & MS, 2 x Antenna mounting w/ cover	1 x SIM Card Slot, 1 x SMBus 2 x PS2/ KB & MS, 2 x Knockouts for Antenna Mounting
DIO	1 x 8bit GPIO	1 x 12bit GPIO	1 x 12bit GPIO
Display Chipset	Intel® Iris® Xe Graphics (i7-1185GRE/i5-1145GRE) Intel® UHD Graphics (i3-1115GRE)	Intel® HD Graphics 520/510	Intel® HD Graphics for Intel Atom® Processor Z3700 Series
Display Resolution	1 x DP 1.4 Max. resolution 4096 x 2304 @ 60Hz 1 x HDMI 2.0b Max. resolution 4096 x 2304 @ 60Hz	DP: Max. resolution 4096 x 2304 @ 60Hz	VGA:Max. resolution 2560 x 1080 @ 60Hz
Audio Chipset	Realtek Audio code	Realtek Audio code	Realtek Audio code
Audio Interface	Mic-In, Line-In	Mic-In, Line-In, Line-Out	Mic-In, Line-In, Line-Out
Ethernet Chipset	1 x Intel I225-LM, w/ TSN (need SW support for TSN) 1 x Intel I219-LM, w/ vPro (w/ i5 and i7 CPU)	1 x Intel® I211AT, 1 x Intel® I219LM	1 x Intel® I211AT
Ethernet Interface	2 x RJ45	2 x RJ45	1 x RJ45
Power Connector	3-Pin Terminal Block	3-Pin Terminal Block	Lockable DC Jack
Power Requirement	Typical +12 ~ +24Vdc (+9V ~ +32Vdv)	Typical +12 ~ +24Vdc (+9V ~ +32Vdv)	+12V ~ +26V TVS component for surge protection Reverse current/ voltage protection
ACPI	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
Power Mode	AT/ ATX (ATX is default setting)	AT/ ATX (ATX is default setting)	AT/ ATX (ATX is default setting)
Adapter	Optional AC-DC Adapter (60W)	Optional AC-DC Adapter (60W)	Optional AC-DC Adapter (60W)
Construction	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal + Plastic
Dimension (L x W x H)	Standard: 240mm x 150mm x 48mm w/ IET module: 240mm x 150mm x 69mm	Standard: 240mm x 151.5mm x 45mm w/ IET module: 240mm x 151.5mm x 60mm	Standard: 240mm x 170mm x 45mm w/ IET module: 240mm x 170mm x 60mm
Operating Temperature	(w/SSD), ambient w/ air flow -40°C ~ 70°C (-40F ~ 158F), 15W CPU	(w/SSD), ambient w/ air flow -20°C ~ 60°C (-4F ~ 140°F)	(w/SSD), ambient w/ air flow -15°C ~ 60°C (5F ~ 140°F) For Valleyview I SoC (w/SSD), ambient w/ air flow -40°C ~ 75°C (-40°F ~ 167°F)
Certification Information	CE, FCC Class B	CE, FCC Class A	CE, FCC Class B

Expandable Fanless System

Model Number	SLP-SKL	SLP-SKLB	SLP-SKG
Processor	Intel® Core™ i7-6700TE Processor (4-Core 2.4GHz) Intel® Core™ i5-6500TE Processor (4-Core,2.3GHz) Intel® Core™ i3-6100TE Processor (2-Core,2.7GHz)		Onboard 6th/7th Gen Intel® Core™ SoC i7/i5/i3 & Celeron® BGA Processor
System Chipset	Intel® Q170 Chipset		N/A
System Memory	2 x 260-Pin DDR4 2133MHz SO-DIMM up to 32 GB (Default: 1 x 4GB DDR4)		2 x 260-Pin DDR4 2133MHz SO-DIMM up to 32 GB (Default: 1 x 4GB DDR4)
Expansion	1 x PCI-e x16 3 x PCI	1 x PCI-e x8 2 x PCI-e x4 1 x PCI	3 Slot : 2 x PCI, 1 x PCIe-1 2 Slot : 1 x PCI, 1 x PCIe-1 1 Slot : 1 x PCIe-4 1 x Key A M.2 2230
Storage	1 x Mini PCI-e Supports mSATA 2 x 2.5" Drive Bay support RAID 0, 1 1 x CFast™		1 x 2.5" Drive Bay
USB	6 x USB 3.0		4 x USB 3.0
COM Port	2 x RS-232 2 x RS-232/422/485		4 x RS232
Other	1 x Power on/off switch with LED 1 x Reset button 1 x HDD LED, 1 x CFast LED 1 x Internal USB 2.0 (Type-A) 1 x PS/2 Keyboard 1 x PS/2 Mouse 1 x 16CH isolated DIO		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
Display	DP + DVI-I		HDMI + VGA
Audio	Mic-In, Line-In and Line-Out		Mic-In and Line-Out
Ethernet	1 x Intel® I219LM, 1 x Intel® I210AT		1 x Intel® I219LM 1 x Intel® I211AT
Power Connector	Phoenix Connector		Phoenix Connector Mini Din connector
Power Requirement	Built-in 9-36 VDC wide-range DC input		+12-24 VDC input
Power Mode	ATX		ATX / AT
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 180W Adapter (24V @ 7.5A)		Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 180W Adapter (24V @ 7.5A)
Operating Temperature	(w/Industrial SSD, CFast), ambient w/ air flow 0°C ~ 50°C (32°F ~ 122°F) (w/ HDD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)		-5°C ~ 45°C (23°F ~ 113°F) w/ HDD, ambient w/ air flow -5°C ~ 55°C (23°F ~ 131°F) w/ Industrial SSD/ RAM, ambient w/ air flow
Storage Temperature	40°C ~ 75°C (-40°F ~ 167°F)		40°C ~ 75°C (-40°F ~ 167°F)
Construction	Aluminum + Metal		Aluminum + Metal
Mounting Kit	Wall Mount VESA (Optional)		N/A
Dimension (L x W x H)	200 x 225 x 218 mm		221.8 x 135 x 232.85 mm
Weight	4.5 kg		3.6 kg



VM System - Automation



VM System - Automation			
Model Number	HPC-BYT	ERS-BYTE-10COM	EMS-SKLU-GPIO
Board	ESM-BYT2 + EAP-CE04 + HPC DB-A	EBM-BYTS + AUX-M03	EBM-SKLUS + AUX-M08
Processor	E3845	J1900	Celeron 3955U
System Memory	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB
Expansion	2 x Mini PCIe	2 x Mini PCIe	1 x Mini PCIe, 1 x M.2 Key B, Size 2242/ 3042
Storage	1 x CFast™, 1 x 2.5" Drive Bay (7mm HDD Restricted)	1 x 2.5" Drive Bay, 1 x mSATA	1 x 2.5" Drive Bay, 1 x M.2 (SATA)
USB	3 x USB 2.0, 1 x USB 3.0	4 x USB 2.0, 1 x USB 3.0	2 x USB 3.0, 1 x USB 2.0
COM Port	2 x RS-232/422/485, 4 x RS-232/422/485 supports 2.5KV isolation	4 x RS-232/422/485, 6 x RS-232 (COM3 ~ COM10 Supports 2.5KV isolation)	2 x RS-232/422/485 (BIOS + DIP Switch)
Other	3 x Antenna hole	1 x SIM Card Slot, 1 x SMBus, 1 x LPT Port, 1 x LVDS, 2 x PS2/ KB & MS, 2 x Antenna hole	1 x SMBus, 2 x PS2/ KB & MS, 2 x Antenna hole
DIO	1 x 16bit GPIO (w/ 5KV isolation)	1 x 12bit GPIO	1 x 12-bit GPIO 1 x 32-bit GPIO w/ 1.5KV Isolation
Display Chipset	Intel® HD Graphics for Intel® Atom® Processor Z3700 Series	Intel® HD Graphics for Intel® Atom® Processor Z3700 Series	Intel® HD Graphics 510
Display Resolution	DP: Max. resolution 2560 x 1080 @ 60Hz DP: Max. resolution 2560 x 1080 @ 60Hz	VGA: Max. resolution 2560 x 1080 @ 60Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	DP: Max. resolution 4096 x 2304 @ 60Hz
Audio Interface	Line-In and Line-Out	Mic-In, Line-In and Line-Out	Mic-In, Line-In, Line-Out
Ethernet Chipset	2 x Intel® I211AT	1 x Intel® I211AT	1 x Intel® I211AT 1 x Intel® I219LM 4 x Intel® I210AT
Ethernet Interface	2 x RJ45	1 x RJ45	6 x RJ45, 4-Port supports 802.3af PoE
Power Requirement	+12V ~ +48V	+12V ~ +26V TVS component for surge protection Reverse current/voltage protection	Typical +12/ +24Vdc (+9V ~ +32Vdc)
Dimension (L x W x H)	5.5" x 3.3" x 6.4" (140.7mm x 85mm x 163mm)	9.09" x 12.36" x 3.15" (231mm x 160mm x 80mm)	TBD
Operating Temperature	(w/SSD, mSATA, CF), ambient w/ air flow -40°C ~ 70°C (-40°F ~ 158°F)	(w/SSD, mSATA), ambient w/ air flow -15°C ~ 60°C (5°F ~ 140°F)	(w/SSD), ambient w/ air flow -20°C ~ 50°C (-4°F ~ 122°F)
Certification Information	CE Heavy Industrial, FCC Heavy Industrial, UL	CE, FCC Class B	CE, FCC Class A



Wide Temperature System



Wide Temperature System			
Model Number	BMX-T521-BSW	BMX-T521-BYT	BMX-T522-SK
Processor	Intel® Celeron® Processor N3160 (2M Cache, up to 2.24 GHz)	Intel® Celeron® Processor J1900 (2M Cache, up to 2.42 GHz)	Intel® 6th Gen Core™ SoC i7/i5/i3 & Celeron® BGA Processor
System Chipset	N/A	N/A	N/A
System Memory	2 x 204-pin DDR3L 1600MHz SO-DIMM up to 8 GB (Default: 1 x 2GB DDR3L)	2 x 204-pin DDR3L 1333MHz SO-DIMM up to 8 GB (Default: 1 x 2GB DDR3L)	2 x 260-pin DDR4 2133MHz SO-DIMM up to 32GB (Default: 1 x 4GB DDR4)
Expansion	1 x Full Size Mini PCI-e support mSATA Only 1 x Full Size Mini PCI-e support WiFi & 3G/4G module	1 x Full Size Mini PCI-e support mSATA Only 1 x Full Size Mini PCI-e support WiFi & 3G/4G module	1 x M.2 Key B 3042/2242/2260/2280 w/ SIM card slot 1 x M.2 Key A 2230 Supports WiFi Module
Storage	1 x SD card slot support SD/ SDHC Card 2 x 2.5" Drive Bay	1 x SD card slot support SD/ SDHC Card 2 x 2.5" Drive Bay	1 x SD card slot support SD/ SDHC Card 2 x 2.5" Internal HDD Bracket
USB	4 x USB 2.0, 4 x USB 3.0	2 x USB 2.0, 4 x USB 3.0	4 x USB 3.0, 4 x USB 2.0
COM Port	5 x RS232 (pin9 with power) 1 x RS232/422/485	5 x RS232 (pin9 with power) 1 x RS232/422/485	4 x RS-232 (pin9 with power) 2 x RS-232/422/485
Other	1 x PS/2 Keyboard or Mouse	1 x SIM Card Slot 2 x SMA Connector (Optional)	1 x SIM Card Slot 2 x SMA Connector (Optional)
Display	Intel® Atom™/ Celeron® SoC Integrated Graphics VGA + HDMI	Intel® Atom™/ Celeron® SoC Integrated Graphics VGA + HDMI	Intel® 6th Gen Core™ SoC i7/i5/i3 & Celeron® BGA Processor DP + DP, DP + HDMI
Display Resolution	VGA: 2560 x 1600 @ 60Hz HDMI: 3840 x 2160 @ 30Hz	VGA: 2560 x 1600 @ 60 Hz HDMI: 1920 x 1200 @ 60Hz	HDMI: 3840 x 2160 @ 30 Hz, 2560 x 1600 @ 30 Hz DP: 4096 x 2160 @ 60Hz
Audio	Realtek Audio code Mic-In and Line-Out	Realtek Audio code Mic-In and Line-Out	Realtek Audio code Mic-In and Line-Out
Ethernet	2 x Intel® I211AT	2 x Intel® I211AT	1 x Intel® i211AT 1 x Intel® i219LM
Power Connector	DC Jack (lockable)	DC Jack (lockable)	DC Jack (lockable)
Power Requirement	+12V	+12V	+12V~24V
Power Mode	ATX	ATX	ATX
Adapter/Power Supply	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)
Operating Temperature	(w/SSD, mSATA), ambient w/ air flow 0°C ~ 50°C (32°F ~ 122°F) (w/HDD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)	(w/SSD, mSATA), ambient w/ air flow 0°C ~ 50°C (32°F ~ 122°F) (w/HDD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F) (w/HDD), ambient w/ air flow 0°C ~ 55°C (32°F ~ 131°F) (w/ Wide-temp SSD & M.2 only), ambient w/ air flow
Storage Temperature	-40°C ~ 75°C (-40°F ~ 167°F)	-40°C ~ 75°C (-40°F ~ 167°F)	-40°C ~ 75°C (-40°F ~ 167°F)
Construction	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal
Mounting Kit	VESA/ Din rail/ Wall Mount (Optional)	VESA/ Din rail/ Wall Mount (Optional)	VESA/ Din rail/ Wall Mount (Optional)
Dimension (L x W x H)	180 x 182 x 76 mm	180 x 182 x 76 mm	180 x 182 x 76 mm



Fanless Embedded System



Fanless Embedded System					
Model Number	EPS-CFS	EPS-CFS2	EPS-KBLHE	EPS-BYT-PCI	ERS-BYT
Board	ECM-CFS	ECM-CFS	ECM-KBLH	EBM-BYTS	ECM-BYT + AUX-032
Processor	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	i7-7820EQ, i5-7440EQ, i3-7100E	J1900	J1900
System Chipset	Intel® Q370 Express Chipset Intel® H310 Express Chipset	Intel® Q370 Express Chipset Intel® H310 Express Chipset	Intel® QM175 Express Chipset	N/A	N/A
System Memory	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 DDR4 2400MHz SO-DIMM up to 16 GB	1 x 204-pin DDR3L 1333MHz SO-DIMM up to 8GB	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB
Expansion	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 mPCIe Supports mSATA 1 x M.2 (B-Key, 2242)	1 x Mini PCIe 2 x PCI	1 x Mini PCIe
Storage	2 x 2.5" Drive Bay 1 x mSATA	2 x 2.5" Drive Bay 1 x mSATA	2 x 2.5" Drive Bay 1 x M.2 (B-Key, 2242) 1 x mSATA	1 x 2.5" Drive Bay 1 x mSATA	1 x CompactFlash Type I/II Socket 1 x mSATA, 1 x 2.5" Drive Bay
USB	2 x USB 2.0, 4 x USB 3.1	2 x USB 2.0, 4 x USB 3.1	2 x USB 2.0, 4 x USB 3.0	4 x USB 2.0	3 x USB 2.0, 1 x USB 3.0
COM Port	2 x RS-232	2 x RS-232	1 x RS-232 1 x RS-232/422/485	6 x RS-232/422/485	3 x RS-232, 1 x RS-232/422/485 (BIOS)
Display Chipset	Intel® UHD Graphics 630/610	Intel® UHD Graphics 630/610	Intel® HD Graphics 630	Intel® Valleyview SoC integrated Graphics	Intel® HD Graphics for Intel® Atom® Processor Z3700 Series
Display Resolution	HDMI: Max. resolution 4096 x 2304 @ 30Hz	HDMI: Max. resolution 4096 x 2304 @ 30Hz	HDMI: Max. resolution 4096 x 2160 @ 24Hz	VGA: Max. resolution 2560 x 1080 @ 60Hz HDMI: Max. resolution 1920 x 1200 @ 60Hz	VGA: Max. resolution 2560 x 1080 @ 60Hz HDMI: Max. resolution 1920 x 1200 @ 60Hz
Audio Chipset	Realtek Audio code	Realtek Audio code	Realtek Audio code	Realtek Audio code	Realtek Audio code
Audio Interface	Mic-In and Line-Out	Mic-In and Line-Out	Mic-In and Line-Out	Mic-In, Line-In and Line-Out	Mic-In, Line-In and Line-Out
Ethernet Chipset	1 x Intel® I211AT 1 x Intel® I219LM	1 x Intel® I211AT 1 x Intel® I219LM	1 x Intel® I210AT 1 x Intel® I219LM	1 x Intel® I211AT	2 x Intel® I211AT
Ethernet Interface	2 x RJ45	2 x RJ45	2 x RJ45	1 x RJ-45	2 x RJ45
Power Connector	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
Power Requirement	+12V	+12V	+12V +9V ~ +36V (optional w/ EPM-1712)	+12V ~ +26V	+12V ~ +26V
ACPI	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, 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 3.0 Compliant
Power Mode	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)
Dimension (L x W x H)	212 x 240 x 85 mm	170 x 195 x 65 mm	240 x 229 x 66 mm	220 x 215 x 147 mm	271 x 150 x 55mm
Operating Temperature	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)	With extended temperature peripherals w/ air flow: -10°C ~ 50°C (14°F ~ 122°F)	(w/SSD, mSATA), ambient w/ air flow -15°C ~ 60°C (5°F ~ 140°F)	(w/SSD, mSATA, CF), ambient w/ air flow -10°C ~ 60°C (14°F ~ 140°F); For Valleyview I SoC (w/SSD, mSATA), ambient w/ air flow -40°C ~ 75°C (-40°F ~ 167°F)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class A

Fanless Embedded System				
Model Number	ECS-APCL	ECS-APCO	NUC-APL	NUC-APL-Slim
Processor	Intel® Celeron® J3455E Processor	Intel® Celeron® N3350 Processor	Intel® Celeron® J3455/N3350 Processor	Intel® Celeron® J3455/N3350 Processor
System Memory	1 x 204-pin SO-DIMM Socket, Max. Up to 8GB DDR3L 1600MHz	2 x 204-pin SO-DIMM Socket, Max. Up to 8GB DDR3L 1600/1333MHz	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
Expansion	1 x M.2 (Key-B, 3042/2242/2260) 1 x M.2 (Type A, 2230)	1 x M.2 (Key-B, 3042/2242/2260) 1 x M.2 Type A 2230	1 x M.2 (Key-B, 2242/3042) 1 x M.2 (Key-E, 2230)	1 x M.2 (Key-B, 2242/3042) 1 x M.2 (Key-E, 2230, PCIe, USB2.0)
Storage	1 x M.2 (Key-B, 3042/2242/2260)	1 x 2.5" Drive Bay 1 x M.2 (Key-B, 3042/2242/2260)	1 x 2.5" Drive Bay (7mm) 1 x M.2 (Key-B, 2242, SATA)	1 x M.2 (Key-B, 2242, SATA)
USB	2 x USB 3.0, 2 x USB 2.0	2 x USB 3.0, 4 x USB 2.0	4 x USB 3.0 (5Gbps)	4 x USB 3.0 (5Gbps)
COM Port	1 x RS-232	1 x RS-232	1 x RS-232/422/485 (BIOS&Cable) 1 x RS-232	1 x RS-232/422/485 (BIOS&Cable)
Other	1 x Power on/off Button 1 x Storage LED 2 x SMA Connector (Optional)	1 x Power on/off Button w/ LED 1 x Storage LED 2 x SMA Connector (Optional)	1 x Power on/off Button w/ LED 1 x Storage LED 2 x Antenna Mounting with Dust Cover	1 x Power on/off Button w/ LED 1 x Storage LED 2 x Antenna Mounting with Dust Cover
Display	1 x DP++: Max. Resolution 4096 x 2160 @ 60Hz 1 x HDMI: Max. Resolution 3840 x 2160 @ 30Hz	1 x DP++: Max. Resolution 4096 x 2160 @ 60Hz 1 x HDMI: Max. Resolution 3840 x 2160 @ 30Hz	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	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
Audio	Realtek Audio code 1 x Line-out	Realtek Audio code 1 x Mic-in and 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)
Ethernet	2 x Intel I211AT	2 x Intel I211AT	2 x Realtek RTL8111E Gigabit	2 x Realtek RTL8111E Gigabit
Power Connector	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
Power Requirement	+12V	+12V	+12V	+12V
Power Mode	ATX	ATX	ATX	ATX
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F) (w/HDD) ambient w/air flow.	0°C ~ 50°C (32°F ~ 104°F), (w/SSD), w/air flow. 0°C ~ 40°C (32°F ~ 113°F), (w/HDD, M.2, OEM chassis), w/air flow	With extended temperature peripherals -10°C ~ 50°C (14°F ~ 122°F), 0.2m/s air flow With extended temperature peripherals -10°C ~ 60°C (14°F ~ 140°F), 0.5m/s air flow	-10°C ~ 40°C (14°F ~ 104°F), 0.2m/s air flow -10°C ~ 50°C (14°F ~ 122°F), 0.5m/s air flow
Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)	-20°C ~ 75°C (-4°F ~ 167°F)	-40°C ~ 75°C (-40°F ~ 167°F)	-40°C ~ 75°C (-40°F ~ 167°F)
Construction	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal
Mounting Kit	Wall Mount (Optional)	VESA/ Din rail/ Wall Mount (Optional)	VESA/ Din rail	VESA/ Din rail
Dimension (L x W x H)	4.75" x 3.75" x 1.96" (120.6 x 95.2 x 49.8 mm)	5.73" x 6.3" x 2.48" (145.5 x 160 x 63 mm)	4.53" x 4.37" x 2.28" (115mm x 111mm x 58mm)	4.53" x 4.37" x 1.77" (115mm x 111mm x 45mm)
Weight	1.2 kg	1.5 kg	0.85kg	0.72kg
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class A	CE, FCC Class A



Fanless Embedded System

ARM-based System



Fanless Embedded System					
Model Number	EPC-WHL	EPC-SKLU	EPC-APL	EPC-BYT2	EPC-BYT
Board	ECM-WHL	ECM-SKLU	ECM-APL2	ECM-BYT2	ECM-BYT + AUX-032
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	Intel® Celeron® J1900 Processor	Intel® Celeron® J1900 Processor
System Memory	2 x 260-Pin DDR4 2400MHz SO-DIMM Socket Up to 64GB	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	1 x 204-Pin DDR3L 1866MHz SO-DIMM up to 8 GB	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB
Expansion	1 x M.2 Key-E includes CNVio Signal (2230) for Wi-Fi Cards 1 x M.2 Key-B with SIM Slot (2242/3042) for LTE & I/O Cards	1 x Full Size Mini PCIe (mSATA) 1 x M.2 (B-KEY, 2242, w/SIM Slot)	1 x Full size Mini PCIe Supports mSATA 1 x Half size Mini PCIe Supports Wi-Fi Module	2 x Mini PCIe	1 x Mini PCIe
Storage	1 x 2.5" Drive Bay (7mm) 1 x M.2 Key-B (2242)	1 x 2.5" Drive Bay (7mm) 1 x M.2 (Key-B, 2242) 1 x mSATA	1 x 2.5" Drive Bay (7mm) 1 x mSATA	1 x 2.5" Drive Bay (7mm) 1 x mSATA	1 x 2.5" Drive Bay (7mm) 1 x CF/II Socket 1 x mSATA
USB	4 x USB 3.1	2 x USB 2.0, 4 x USB 3.0	4 x USB 3.0	3 x USB 2.0, 1 x USB 3.0	5 x USB 2.0, 1 x USB 3.0
COM Port	1 x RS232 (Factory Option)	1 x RS-232 1 x RS-232/422/485 (Cable & BIOS)	1 x RS-232/422/485 (Jumper)	1 x RS-232/422/485	3 x RS-232, 1 x RS-232/422/485
Other	2 x Antenna Mounting with Dust Protection Cove	2 x Antenna Mounting with Dust Protection Cover	2 x Knockouts for Antenna Mounting	2 x Knockouts for Antenna Mounting	1 x Knockouts for Antenna Mounting
Display Chipset	Intel® UHD Graphics 620	Intel® HD Graphics 520/ 510	Intel® HD Graphics 505/500	Intel® HD Graphics for Intel® Atom® Processor Z3700 Series	Intel® HD Graphics for Intel® Atom® Processor Z3700 Series
Resolution	2 x HDMI 1.4: Max. Resolution 4096 x 2160 @ 24Hz	2 x HDMI: Max. Resolution 4096 x 2160 @ 24Hz	1 x VGA: Max. resolution 1920 x 1200 @ 60Hz 1 x HDMI: Max. resolution 3840 x 2160 @ 30Hz	1 x VGA: Max. resolution 2560 x 1080 @ 60Hz 1 x HDMI: Max. resolution 1920 x 1200 @ 60Hz	1 x VGA: Max. resolution 2560 x 1080 @ 60Hz 1 x HDMI: Max. resolution 1920 x 1200 @ 60Hz
Audio Chipset	Realtek Audio code	Realtek Audio code	Realtek Audio code	Realtek Audio code	Realtek Audio code
Audio Interface	1 x Line-Out 1 x Mic-In	Mic-in/Line-out (Factory Option)	Mic-in/Line-out (Factory Option)	N/A	Mic-In, Line-In and Line-Out
Ethernet Chipset	1 x Intel® I211AT 1 x Intel® I219LM	1 x Intel® I211AT 1 x Intel® I219LM	2 x Intel® I211AT	2 x Realtek 8111E	2 x Intel® I211AT
Ethernet Interface	2 x RJ45	2 x RJ45	2 x RJ45	2 x RJ45	2 x RJ45
Power Connector	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
Power Requirement	+12V	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V
ACPI	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
Power Mode	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)
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	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
Construction	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal
Dimension (L x W x H)	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)	6.88" x 4.33" x 1.57" (175mm x 110mm x 40mm)	7" x 5.6" x 2.0" (178mm x 142mm x 50mm)
Operating Temperature	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)	-10 ~ 45°C (w/mSATA & SSD), Ambient w/Air Flow 0 ~ 40°C (32 ~ 104°F)	(w/SSD, mSATA, CF), ambient w/ air flow 0°C ~ 50°C (32°F ~ 122°F)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class A	CE, FCC Class A

ARM-based System			
Model Number	AIB-IMX6	AIB-IMX6A	AIB-IMX8M
Processor	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
System Memory	Onboard DDR3 1GB	Onboard DDR3 1GB	Onboard DDR4 2GB
Storage	1 x On board 4GB eMMC	1 x On board 8GB eMMC	1 x On board 8GB eMMC
External I/O Connector	1 x USB2.0 Type A (Double deck) 1 x HDMI 1 x 10/100/1000 LAN RJ45 Optional Powered LAN support (IEEE 802.3at) 1 x Micro SD socket	2 x USB 2.0 (Double deck) 1 x Mini-USB Connector 4 x COM Port COM1/2 on board-DB9 (RS232/422/485) COM3 Cable-DB9 (RS232) Debug Port 1 x HDMI 2 x Gigabit LAN 1 x Micro SD socket	1 x USB 3.0 Type A (Vertical type) 1 x USB 3.0 Type C 2 x Gigabit LAN 1 x HDMI (Vertical type) 1 x Micro SD socket 1 x Hand Phone 1 x Reset 1 x Power LED (Green)
Power Requirement	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
Operating Temperature	-20°C ~ 70°C (-4°F ~ 158°F)	-20°C ~ 50°C (-4°F ~ 122°F)	-40°C ~ 85°C (-40°F ~ 185°F)
Storage Temperature	-40°C ~ 70°C (-40°F ~ 158°F)	-20°C ~ 70°C (-4°F ~ 158°F)	-40°C ~ 85°C (-40°F ~ 185°F)
Dimension (L x W x H)	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
Weight	1.5 kg	1.0 kg	2.0 kg
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B
Software Support	Android 4.4 or 6.0 Ubuntu 12.04 Yocto 2.1	Yocto 1.7 / 2.5	Android 9.0 Linux Yocto 2.5



Mainboard with IPMI Solution



Mainboard with IPMI Solution			
Model Number	HPM-246UA	HPM-621DE	HPM-621UA
Processor	Intel® LGA1151 Socket supports 8/9th Gen. Intel® Xeon® E (Workstation)/Core™-i, Pentium®/Celeron® Processor (Max. TDP at 95W)	Dual Intel® FCLGA3647 sockets support dual 2nd Gen. Intel® Xeon® Scalable Processor (Max. TDP at 150W)	Intel® FCLGA3647 Socket supports 2nd Gen. Intel® Xeon® Scalable Processor (Max. TDP at 150W)
System Chipset	Intel® C246 Chipset	Intel® C621 Chipset	Intel® C621 Chipset
System Memory	4 x DDR4 2666/ 2400/ 2133 MHz DIMM supports up to 128 GB (ECC memory supported by CPU)	12 x DDR4 2933/ 2666/ 2400/ 2133 ECC RDIMM/ LRDIMM Up to 768GB	6 x DDR4 2933/ 2666/ 2400/ 2133 ECC RDIMM/ LRDIMM Up to 384GB
Expansion	1 x PCI-E Gen3 x16 slot 1 x PCI-E Gen2 x8 slot 1 x PCI-E Gen3 x4 slot 1 x PCI-E Gen3 x1 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)
Display	Intel® 8/9th Gen. CPU Integrated 3 x DP++ AST 2500 BMC Controller	AST 2500 BMC Controller	AST 2500 BMC Controller
Resolution	DP: 4096 x 2304 @ 60Hz HDMI : 4096 x 2160 @ 30Hz VGA: 1920 x 1200 @ 60Hz 32bpp	VGA: 1920 x 1200 @ 60Hz 32bpp	VGA: 1920 x 1200 @ 60Hz 32bpp
Audio	Realtek Audio code Mic-in, Line-in, Line-out	NA	NA
Ethernet	7 x Intel® I210AT Giga-bit Ethernet	4 x Intel® I210AT Giga-bit Ethernet	4 x Intel® I210AT Giga-bit Ethernet
USB/SATA/COM/LAN	8/4/2/7	8/10/2/4	8/9/2/4
Power Requirement	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
Power Type	ATX	ATX	ATX
IPMI	IPMI 2.0	IPMI 2.0	IPMI 2.0
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	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
Weight	1.54 lbs (0.7 kg)	3.96 lbs (1.8kg)	2.14 lbs (0.97 kg)



Barebone System with IPMI Solution



Barebone System with IPMI Solution			
Model Number	HPS-246U4A	HPS-621D4A	HPS-621U4A
Processor (CPU Type)	Intel® LGA1151 Socket supports 8/9th Gen. Intel® Xeon® E (Workstation)/Core™-i, Pentium®/Celeron® Processor (Max. TDP at 95W)	Dual Intel® FCLGA3647 Sockets support dual 2nd Gen. Intel® Xeon® Scalable Processor (Max. TDP at 150W)	Intel® FCLGA3647 Socket supports 2nd Gen. Intel® Xeon® Scalable Processor (Max. TDP at 150W)
Chipset	Intel® C246 Chipset	Intel® C621 Chipset	Intel® C621 Chipset
Memory	4 x DDR4 2666/ 2400/ 2133MHz DIMM supports up to 128 GB (ECC memory supported by CPU)	12 x DDR4 2933/ 2666/ 2400/ 2133 ECC RDIMM/ LRDIMM Up to 768GB	6 x DDR4 2933/ 2666/ 2400/ 2133 ECC RDIMM/ LRDIMM Up to 384GB
Storage	External: 1 x 5.25" Internal: 3 x 2.5" (HPM-246 supports up to 4 SATA ports)	External: 1 x 5.25" Internal: 3 x 2.5" (HPM-621DE supports up to 10 SATA ports, 4 x Oculink ports from CPU 2)	External: 1 x 5.25" Internal: 3 x 2.5" (HPM-621UA supports up to 9 SATA ports)
IPMI	IPMI 2.0	IPMI 2.0	IPMI 2.0
Expansion Slots	1 x PCI-E Gen3 x16 slot 1 x PCI-E Gen2 x8 slot 1 x PCI-E Gen3 x4 slot 1 x PCI-E Gen3 x1 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)
LAN	7 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
USB	Rear: 2 x USB 3.2 Gen1 Internal: 6 x USB 3.2 Gen1	Rear: 4 x USB 3.2 Gen1 Internal: 2 x USB 3.2 Gen1, 2 x USB 2.0 ports	Rear: 4 x USB 3.2 Gen1 Internal: 2 x USB 3.2 Gen1, 2 x USB 2.0 ports
Display	Intel® 8/9th Gen. CPU Integrated 3 x DP++ AST 2500 BMC Controller	AST 2500 BMC Controller	AST 2500 BMC Controller
Display Resolution	DP: 4096 x 2304 @ 60Hz HDMI : 4096 x 2160 @ 30Hz VGA: 1920 x 1200 @ 60Hz 32bpp	VGA: 1920 x 1200 @ 60Hz 32bpp	VGA: 1920 x 1200 @ 60Hz 32bpp
Audio	NA	NA	NA
Cooling Fan	80 x 25mm Rear Fan x 2	80 x 25mm Front Fan x 2 80 x 25mm Rear Fan x 2	80 x 25mm Front Fan x 2 80 x 25mm Rear Fan x 2
Power Supply	500W	1300W	700W
Power Mode	ATX	ATX	ATX
Operating Temperature	5°C ~ 45°C (41°F ~ 113°F)	5°C ~ 45°C (41°F ~ 113°F)	5°C ~ 45°C (41°F ~ 113°F)
Dimension (L x W x H)	528 x 430 x 174.8 mm (20.7" x 16.9" x 6.9")	528 x 430 x 174.8 mm (20.7" x 16.9" x 6.9")	528 x 430 x 174.8 mm (20.7" x 16.9" x 6.9")
Form Factor	19" 4U Rackmount	19" 4U Rackmount	19" 4U Rackmount
OS	Windows 10 IoT Enterprise 64-bit Windows Server 2016 Windows Server 2019 Ubuntu 18.04	Windows 10 IoT Enterprise 64-bit Windows Server 2016 Windows Server 2019 Ubuntu 18.04	Windows 10 IoT Enterprise 64-bit Windows Server 2016 Windows Server 2019 Ubuntu 18.04

Barebone System



Barebone System

Model Number	BMX-T540-C246	BMX-P521-H110	BMX-P521-Q170	BMX-T524-Q170	BMX-T524-H110
Processor	Intel® LGA1151 Socket Supports 8/9th Gen. Core™ i7/i5/i3/Pentium®/ Celeron® Processors (Max. TDP at 95W)	Intel® LGA1151 Socket Supports 6/7th Generation Core™ Refresh i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 85W)	Intel® LGA1151 Socket Supports 6/7th Generation Core™ Refresh i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 85W)	Intel® LGA1151 Socket Supports 6/7th Generation Core™ Refresh i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 65W)	Intel® LGA1151 Socket Supports 6/7th Generation Core™ Refresh i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 65W)
System Chipset	Intel® C246 Chipset	Intel® H110 Chipset	Intel® Q170 Chipset	Intel® Q170 Chipset	Intel® H110 Chipset
System Memory	2 x 260-pin DDR4 2400/2666MHz SO-DIMM supports up to 64GB (ECC memory supported by CPU)	2 x 260-pin DDR4 2133MHz SO-DIMM Supports up to 32GB	2 x 260-pin DDR4 2133MHz SO-DIMM Supports up to 32GB	2 x 260-pin DDR4 2133MHz SO-DIMM Supports up to 32GB	2 x 260-pin DDR4 2133MHz SO-DIMM Supports up to 32GB
Expansion	1 x PCI-e x16 1 x M.2 M-Key 1 x M.2 E-Key 2 x Full Height Expansion Slot	1 x PCI-e x16, 1 x Full Size Mini PCI-e Supports mSATA (by auto switch IC), 1 x Half Size Mini PCI-e 1 x Low Profile Expansion Slot	1 x PCI-e x16, 1 x Full Size Mini PCI-e Supports mSATA (by auto switch IC), 1 x Half Size Mini PCI-e 1 x Low Profile Expansion Slot	1 x Full Size Mini PCI-e Supports mSATA (by auto switch IC) 1 x Half Size Mini PCI-e	1 x Full Size Mini PCI-e Supports mSATA (by auto switch IC) 1 x Half Size Mini PCI-e
Storage	2 x 2.5" HDD/SSD bracket	1 x 2.5" or 1 x 3.5" (up to 24.5mm) HDD/SSD Bracket 1 x 3.5" (up to 20.0mm) HDD Bracket 1 x 5.25" External Drive Bay	1 x 2.5" or 1 x 3.5" (up to 24.5mm) HDD/SSD Bracket 1 x 3.5" (up to 20.0mm) HDD Bracket 1 x 5.25" External Drive Bay	2 x 2.5" or 1 x 3.5" HDD Bracket	2 x 2.5" or 1 x 3.5" HDD Bracket
USB	8 x USB 3.1 Gen1, 4 x USB 2.0	4 x USB 2.0, 4 x USB 3.0	6 x USB 2.0, 4 x USB 3.0	4 x USB 2.0, 4 x USB 3.0	4 x USB 2.0, 4 x USB 3.0
COM Port	4 x RS-232, 2 x RS-232/422/485 (by demand)	5 x RS-232, 1 x RS-232/422/485	5 x RS-232, 1 x RS-232/422/485	4 x RS232 (pin9 with power) 1 x RS232/422/485	4 x RS232 (pin9 with power) 1 x RS232/422/485
Other	1 x PS/2 Keyboard & Mouse Combo Jack	1 x SMA Connector (Optional) 1 x PS/2 Keyboard & Mouse Combo Jack	1 x SMA Connector (Optional) 1 x PS/2 Keyboard & Mouse Combo Jack	2 x SMA Connector (Optional) 1 x PS/2 Keyboard & Mouse Combo Jack	2 x SMA Connector (Optional) 1 x PS/2 Keyboard & Mouse Combo Jack
Display	Dual HDMI, VGA Triple display	HDMI + VGA (or DP) Dual Display	VGA, HDMI, DP Triple display	VGA, HDMI, DP Triple display	HDMI + VGA (or DP) Dual Display
Display Resolution	VGA: 2048 x 1536 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 30Hz Dual channel 18/24-bits LVDS (Chrontel CH7511B eDP to LVDS) By BOM option	VGA: 2560 x 1600 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz	VGA: 2560 x 1600 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz	VGA: 2560 x 1600 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz	VGA: 2560 x 1600 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz
Audio	Realtek Audio code with 3W Amplifier (optional 1 x Audio out, 1 x Mic in, 2 x speaker) Front: Mic-In, Line-In, Line-Out Rear: Mic-In, Line-Out	Realtek Audio code Decoding Controller with 6W Amplifier Front: Mic-In, Line-In, Line-Out Rear: Mic-In, Line-Out	Realtek Audio code Decoding Controller with 6W Amplifier Front: Mic-In, Line-In, Line-Out Rear: Mic-In, Line-Out	Realtek Audio code Decoding Controller with 6W Amplifier	Realtek Audio code Decoding Controller with 6W Amplifier
Ethernet	1 x Intel® I219-LM 3 x Intel® I210-AT	1 x Intel® I219-LM 1 x Intel® I211-AT	1 x Intel® I219-LM 1 x Intel® I211-AT	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT
Power Connector	AC Jack (IEC 320 C14)	AC Jack (IEC 320 C14)	AC Jack (IEC 320 C14)	Power Din Jack	Power Din Jack
Power Requirement	100 ~ 240 VAC	100 ~ 240 VAC	100 ~ 240 VAC	DC in 18~28V via power converter	DC in 18~28V via power converter
Power Mode	ATX	ATX	ATX	ATX	ATX
Adapter/Power Supply	Standard 1U 400W Power Supply	Standard TFX 300W Power Supply	Standard TFX 300W Power Supply	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 120W Adapter (19V @ 6.3A)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 120W Adapter (19V @ 6.3A)
Operating Temperature	(w/SSD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)	(w/HDD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)	(w/HDD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)	(w/HDD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)	(w/HDD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	-40°C ~ 75°C (-40°F ~ 167°F)	-20°C ~ 70°C (-4°F ~ 158°F)	-20°C ~ 70°C (-4°F ~ 158°F)	-40°C ~ 75°C (-40°F ~ 167°F)	-40°C ~ 75°C (-40°F ~ 167°F)
Construction	Aluminum + Metal	Metal	Metal	Aluminum + Metal	Aluminum + Metal
Mounting Kit	N/A	N/A	N/A	VESA/ Din rail/ Wall Mount (Optional)	VESA/ Din rail/ Wall Mount (Optional)
Dimension (L x W x H)	372 x 307 x 107 mm	341 x 265 x 102 mm	341 x 265 x 102 mm	205 x 205 x 86 mm	205 x 205 x 86 mm

Rackmount System



Rackmount System

Model Number	BAX-R1U0-H11K	BAX-R1U0-Q17K	BAX-R2U0-Q17K	BAX-R4U0-Q17K	BAX-R1U4S-Q17K	BAX-R2U8S-Q17K
Processor	Intel® 6/7th Generation Core™ i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 35W)	Intel® 6/7th Generation Core™ i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 35W)	Intel® 6/7th Generation Core™ i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 95W)	Intel® 6/7th Generation Core™ i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 95W)	Intel® 6/7th Generation Core™ i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 35W)	Intel® 6/7th Generation Core™ i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 95W)
System Memory	2 x 288-pin DDR4 2133MHz DIMM up to 32 GB	4 x 288-pin DDR4 2133MHz DIMM up to 64 GB	4 x 288-pin DDR4 2133MHz DIMM up to 64 GB	4 x 288-pin DDR4 2133MHz DIMM up to 64 GB	4 x 288-pin DDR4 2133MHz DIMM up to 64GB	4 x 288-pin DDR4 2133MHz DIMM up to 64GB
Storage	2 x 3.5" Drive Bay or 1 x 2.5" + 1 x 3.5" Drive Bay	2 x 3.5" Drive Bay or 1 x 2.5" + 1 x 3.5" Drive Bay	6 x 3.5" Drive Bay or 2 x 5.25" + 4 x 3.5" Drive Bay	3 x 3.5" Internal Drive Bay 2 x 3.5" + 3 x 5.25" External Drive Bay	4 x 2.5" or 3.5" hot-swap HDD trays 1 x Internal 2.5" Drive Bay	8 x 2.5" or 3.5" hot-swap HDD trays 1 x 2.5" Internal Drive Bay
Expansion	Full Height PCI-e Slot x 1 (via riser card and bracket)	Full Height PCI-e Slot x 1 (via riser card and bracket)	7 x Low profile expansion slots	7 x Full Height expansion slots	Full Height PCI-e Slot x 1 (via riser card and bracket)	7 x Low profile expansion slots
Display	Intel® 7th Generation CPU integrated HDMI + VGA, HDMI + DP, VGA + DP	Intel® 7th Generation CPU integrated VGA + HDMI + DP	Intel® 7th Generation CPU integrated VGA + HDMI + DP	Intel® 7th Generation CPU integrated VGA + HDMI + DP	Intel® 7th Generation CPU integrated HDMI + VGA + DP	Intel® 7th Generation CPU integrated HDMI + VGA + DP
Audio	Realtek Audio code Mic-In, Line-In and Line-Out 2 x 6W Amplifier	Realtek Audio code Mic-In, Line-In and Line-Out 2 x 6W Amplifier	Realtek Audio code Mic-In, Line-In and Line-Out 2 x 6W Amplifier	Realtek Audio code Mic-In, Line-In and Line-Out 2 x 6W Amplifier	Realtek Audio code Mic-In, Line-In and Line-Out 2 x 6W Amplifier	Realtek Audio code Mic-In, Line-In and Line-Out 2 x 6W Amplifier
Ethernet	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT
USB	4 x USB 3.0 2 x USB 2.0	4 x USB 3.0 2 x USB 2.0	4 x USB 3.0 2 x USB 2.0	4 x USB 3.0 2 x USB 2.0	4 x USB 3.0 2 x USB 2.0	4 x USB 3.0 2 x USB 2.0
COM Port	1 x RS-232	1 x RS-232	1 x RS-232	1 x RS-232	1 x RS-232	1 x RS-232
Others	1 x PS/2 Keyboard or Mouse	1 x PS/2 Keyboard or Mouse	1 x PS/2 Keyboard or Mouse	1 x PS/2 Keyboard or Mouse	1 x PS/2 Keyboard or Mouse	1 x PS/2 Keyboard or Mouse
Power Type	ATX	ATX	ATX	ATX	ATX	ATX
Operating Temperature	0°C ~ 35°C (32°F ~ 95°F)	0°C ~ 35°C (32°F ~ 95°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)
Power Supply	315W 1U Flex 100-240Vac	315W 1U Flex 100-240Vac	500W PS2 100-240Vac	500W PS2 100-240Vac	315W 1U Flex 100-240Vac	500W 1U Single 100-240Vac
Dimensions (L x W x H) w/o Front Panel	381 x 482.6 x 44.4 mm	381 x 482.6 x 44.4 mm	504 x 482.6 x 88.9 mm	508 x 482.6 x 178 mm	533.4 x 482.6 x 44.4 mm	571.5 x 482.6 x 88.9 mm



Wireless Sensor Node

Avalue NB-IOT is one of the best LPWA solutions for IOT application

- Low power consumption
- Build in GPS/G-Sensor functions
- Rich interface for connecting external sensors
- IP65 waterproof design
- Build in GPS/NBIOT antenna
- Support wide range power input



Wireless Sensor Node

Model Number	ASN-NBIOT
Processor	STMicroelectronics STM32L476ZGT6
Flash Memory	1MB Flash Memory
SRAM	128KB SRAM
LPWAN Module	Quectel BC95-G Support LTE Band : 1/3/5/8/20/28
GPS Module	Quectel L70B-M39
Indicate LED	LED for Power & NBIOT connection status Power: Green OK; Orange Charging; Red Lower battery NBIOT: Green Connected; Red Disconnected
Battery	1S2P 18650 Rechargeable Battery
External I/O Connector	1 x IP65 M12 connector for power input and sensors I/O interface include with UART/SPI/I2C/ADC/DAC
Internal I/O Connector	Micro USB : Firmware update interface for STM32L476ZGT6 Micro SD : Micro SD socket for storage extension Micro Sim : Micro Sim socket for NBIOT JIO1 : 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
Power Requirement	8V ~ 18V Wide Range DC IN (Typical : 12V DC IN)
IP Level	IP65
Mounting Method	DIN 35 rail or wall mount
Operating Temperature	-20°C ~ 60°C (-4°F ~ 140°F) w/o battery 15°C ~ 40°C (59°F ~ 104°F) w/ battery
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F) w/o battery -20°C ~ 20°C (-4°F ~ 68°F) w/ battery
Dimension (L x W x H)	38.7mm x 94mm x 148 mm
Weight	w/o Battery : 0.23 KG w/ Battery : 0.33 KG



Communication Board

- Built-in touch screen
- Very low power consumption
- High performance i.MX 7Dual processor
- No power needed to maintain display image



Digital Signal Display

- High performance
- Low power consumption
- Comfortable display experiences
- Multi OS support
- Easy installation & light weight design



Bedside Card

- Patient info
- Instant status
- Multiple pages
- Mobility with bed
- Green technology

E Ink Display

E Ink Display

Model Number	EPD-42T	EPD-3133	EPD-1333	EBC-05B1
LCD Size	42"	31.2"	13.3"	5.65"
Resolution	H: 2160 x V: 2880	H: 2560 x V: 1440	H: 1600 x V: 1200	H: 600 x V: 448
Viewing Angle	180 (U), 180 (D), 180 (L), 180 (R)	180 (U), 180 (D), 180 (L), 180 (R)	180 (U), 180 (D), 180 (L), 180 (R)	180 (U), 180 (D), 180 (L), 180 (R)
Touch Type	Projective Capacitive	Projective Capacitive	Projective Capacitive (By Option)	Cover Lens only
Processor	NXP i.MX 7Dual Processor / Dual Arm® Cortex®-A7 Cores And Cortex-M4	Onboard Intel® Celeron® SoC BGA Processor N3350 (Apollo Lake Platform)		MDBT50Q - U1MV2 (nRF52840)
System Memory	On-Board 2GB DDR3L	1 x 204-Pin DDR3L 1866MTs SO-DIMM up to 8GB		1MB flash / 256KB RAM
Wireless	M.2 Wi-Fi/Bluetooth module(Optional)	mPCIe Wi-Fi/Bluetooth module (Optional)		BT 5.0
Storage	On-Board 8GB eMMC	2.5" SATA3 SSD 64GB	1 x mSATA support from Mini PCIe	N/A
External I/O Connector	2 x USB 2.0 (Edge I/O) 1 x Micro USB for USB OTG 1 x RJ-45 connector for Gigabit Ethernet	4 x USB 3.1 (Gen1 5Gbps) 1 x DB-9 male connector for COM1 2 x RJ45 LAN port	2 x HDMI (1.4b); Max. Resolution 3840 x 2160 @ 30Hz	N/A
Power Requirement	DC +12V	DC +19V		AAAA Alkaline batteries * 4
Power Type	AT	AT/ATX		AT
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	0 ~ 50°C (32 ~ 122°F)		0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)		-20 ~ 60°C (-4 ~ 140°F)
Operating Humidity	40°C @ 95% Relative Humidity, Noncondensing	40°C @ 95% Relative Humidity, Noncondensing		40°C @ 95% Relative Humidity, Non-condensing
Software Support	Android 5.1 (default) / Linux 4.15 (Yocto 2.1)	Android 8.1 (default) / Windows 10 IoT		Windows 10 IoT/ Linux
Dimension	918.8 x 704.6 x 37.6 mm	750 x 445 x 36.7 mm	TBD	159 x 113 x 15 mm
Certification	CE, FCC Class B	CE/FCC Class A	CE/FCC Class A	CE/FCC



MEDICAL



Support Hardware

- Bedside terminals
- Set-Top-Box for TVs
- Mobile devices
- BYOD
- Mounting solutions



Android Firmware

- Locked down
- Customizable
- Standard Android apps
- Easy deployment
- Media sharing
- Wifi bubble



Cloud Management

- Device management
- App management
- Content management



App Catalog

- Basic apps
- Public free apps
- 3rd party apps (Patient engagement)
- Customer apps (by hospitals, partners)

Medical Panel PC



Medi-View Series



Interactive

Leading edge touchscreen technologies are integrated on all healthcare terminals.



Multimedia

The interactive patient solution utilizes many multimedia features; video, voice over IP, web camera/video, and stereo audio.



Communication

The voice over IP handset utilizes digital telephony and incorporates a membrane keypad and an optional 2D barcode scanner



Connectivity

Power controlled USB ports and audio connectivity (for headphones) are provide for system users. A variety of external peripherals can be adapted to the docking areas of the terminals.



Security

The smart technology solution utilizes a RFID reader to activate a secure portal for healthcare staff to access patient clinical records. Smartcard readers are incorporated for unique patient login, or payment credit for selected entertainment services.



Environmental

Front face IP65 sealing is provided to protect against the ingress of fluids and dust that may be encountered. The rear design of the healthcare terminals is compliant to IP54 Standards.

Medical Panel PC - Medi-View Series

Model Number	Medi-View-156	Medi-View-185
LCD Size	15.6"	18.5"
Display Type	HD	HD
Resolution	1366 x 768	1366 x 768
Pixel Pitch	0.3 (H) x 0.3 (V) mm	0.3 (H) x 0.3 (V) mm
Luminance	220 cd/m ²	300 cd/m ²
Contrast Ratio	400 ~ 500	700 ~ 1000
Viewing Angle	Horizontal 40 ~45; Vertical 10 ~15 (upper) 30 ~ 35 (lower)	Horizontal 150 ~170; Vertical 140 ~160
Response Time	TRT 8 - 16ms	TR 2.5 ~2.5ms; TF 3.5-5.5ms
Backlight	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive
Touch Light Transmission	88% +/- 3%	88% +/- 3%
Touch Controller	Control Board EETI	Control Board EETI
Processor	Intel® Atom™ Processor Z3735F	
System Memory	2GB DDR3L RAM	
Storage	32GB eMMC	
USB	3 x USB 2.0, 1 x Micro USB Client (Android)	
Other	2 x Stero Phone Jack 1 x Digital Mic 1 x Powered LAN (optional for 15.6" only) Option RFID/SCR module/ Wifi module/ Multimedia Handset	
Audio	Realtek ALC5645	
Audio Interface	Mic-in and Line-out, 2 x 3W Speaker	
Ethernet	1 x Microchip LAN9512	
Power Connector	DC Jack, 12V ~ 24V Input	
Power Type	ATX	
Adapter	Input:100~ 240 Vac/ 50 ~ 60Hz; Output 90W Adapter (19V/4.73A)	
Construction (Front, Rear)	White Plastic	
Finishing	Anti-microbial	
Dimension	392.45 x 255.45 x 63.42 mm	463.95 x 289.95 x 68.83 mm
Weight	2.82 kg	3.75 kg
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	
Storage Temperature	-10°C ~ 60°C (14°F ~ 140°F)	
Certification	CE CLASS A, FCC Part 15, CLASS A UL/IEC/EN60601-1 ANSI/AAMI ES60601-1 CAN/ CSA-C22.2 No. 60601-1	CE CLASS A FCC Part 15, CLASS A UL/IEC/EN60601-1
OS Information	Win 8.1, Win 10, Android 4.4, Ubuntu 14.04	Win 8.1, Win 10, Android 4.4, Ubuntu 14.04



HID Series

Excellent System Performance

- 21.5" Full Flat PCAP Multi-Touch supports up to 10 points
- Intel® 6th Gen Core-i/ Celeron® processor
- UL60601-1 4th edition/ CE/ FCC Class B
- IP65 Rating
- Anti-Microbial Finishing
- Super slim design

Optional Headset + 1D barcode scanner

Easy Maintenance

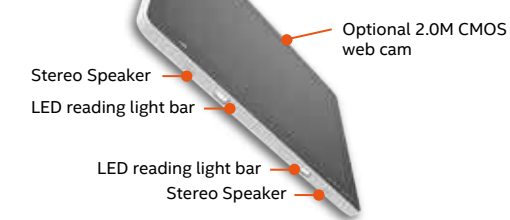
- Fanless Operation Design
- Optional SCR/MSR/Wifi/BT module
- Optional internal backup battery module

Service windows for 2.5 storage replacement



I/O cover for cable arrangement

Designed for easy usage



Reserve Enhance Space

- Smart Card Reader
- Magnetic Strap Reader
- Finger Print Reader

Front bezel touch keypad

- Reading light control
- Panel backlight Increase/ Decrease
- Volume Up/ Down
- Power button
- Touch On/Off
- NFC/RFID module

Medical Panel PC - HID Series

Model Number	HID-2132	HID-2232	HID-2432	HID-2334
LCD Size	21.5"	21.5"	23.8"	23.8"
Display Type	Full HD	FHD	Full HD	FHD
Resolution	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
Pixel Pitch	0.248 x 0.248	0.248 x 0.248	0.274 x 0.274	0.274 x 0.274
Luminance	250 cd/m ²	250 cd/m ²	250 cd/m ²	250 cd/m ²
Contrast Ratio	3000	3000	3000	3000
Viewing Angle	89 (U), 89 (D), 89 (L), 89 (R)	89 (U), 89 (D), 89 (L), 89 (R)	89 (U), 89 (D), 89 (L), 89 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	18 ms	18 ms	N/A	16 ms
Backlight	LED	LED	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
Touch Light Transmission	89%	89%	89%	86%
Touch Controller	USB interface, EETI	USB interface, EETI	USB touch (EETI)	USB interface, EETI
SBC	ARC-SKLU	ARC-SKLU	ARC-SKLU	HID-2334 M/B + Charger board
Processor	6th Gen Intel® Core™ i7/5/3/Celeron processor	6th Gen Intel® Core™ i5-6300U, 2-Core, 2.4GHz processor		7th Generation Intel® Kaby Lake Core™ i7/i5/i3/ Celeron® Processor
I/O Chipset	EC ITE IT8528E			EC ITE IT8518E
System Memory	1 x 260pin SODIMM socket up to 16GB DDR4 2133 SDRAM			2 x 260pin SODIMM socket up to 32GB DDR4 2400 SDRAM
Expansion	1 x Full Size (support half size, Auto switch for mSATA, USB, PCIe signal)			1 x M.2 (Key E, 2230) with PCIe x1, CNVI and USB2.0 for Wireless 1 x mini PCIe with SATA or PCIe x1 mSATA
Storage	1 x 2.5" SATA3 SSD			1 x 2.5" SATA3 SSD
USB	4 x USB 3.0, 4 x USB 2.0 by pin header 1 x USB 2.0 (Isolated 5KV)	4 x USB 3.0, 4 x USB 2.0 by pin header 2 x USB 2.0 (Isolated 5KV)		4 x USB 3.0
COM Port	1 x RS-232/422/485, 1 x RS-232 1 x RS-232 (Isolated 5KV)	1 x RS-232/422/485, 1 x RS-232 1 x RS-232/422/485 (Isolated 5KV) on IET module		N/A
Other	Dual LED Reading Light Bar, I/O Cover		HDMI Video out on IET module, DICOM pre-set	
Display Chipset	Intel® HD Graphics 520		Intel® HD Graphics 620	
Audio	Realtek ALC892		Realtek ALC892	
Audio Interface	2 x 0.5W		Line Out, Mic in, 2 x 0.5W	
Ethernet	1 x Intel® I219LM, 1 x Intel® I211AT 1 x Intel® I210AT (Isolated 5KV) on IET module	1 x Intel® I219LM, 1 x Intel® I211AT 2 x Intel® I210AT (Isolated 5KV) on IET module		1 x Intel® I211AT, 1 x Intel® I219LM
Adapter	AC/ DC medical power adapter Output: 90W Adapter (19V/4.74A Adapter)		AC/ DC medical power adapter +24Vdc, 3.75A max. (90W) Output Voltage	
Construction (Front, Rear)	Plastic, Plastic		Plastic, Plastic	
Dimension	539.6 x 342.6 x 45.2 mm	521.0 x 326.0 x 56.5 mm	587.0 x 367.5 x 59.0 mm	380 x 587 x 45.5mm
Weight	6.2 kg	7.5 kg	8.5 kg	6.9 kg (without batteries)
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)		0 ~ 35° C (32 ~ 95° F)	
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)		-20°C ~ 60°C (-4°F ~ 140°F)	
Certification	CE, FCC Class B, UL60601-1 4th edition	DIN 6868157/ CE, FCC Class B, UL60601-1 4th edition		CE, FCC Class B, UL60601-1 4th edition
OS Information	Win 7/10/ Linux	Win 7/10/ Linux		Win 10/ Linux



Open frame Industrial Monitor



Industrial Monitor/Industrial Display

Open frame Industrial Monitor

Model Number	OFM-15W00	OFM-21W00
LCD Size	15.6", 16:9	21.5", 16:9
Display Type	Full HD	Full HD
Resolution	1920 x 1080	1920 x 1080
Pixel Pitch	0.17925(H) x 0.17925(V)	0.24795(H) x 0.24795(V)
Luminance	220 cd/m ²	250 cd/m ²
Contrast Ratio	800	2000
Viewing Angle	85 (U), 85 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	30 ms	35 ms
Backlight	LED	
Touch Type	Projective Capacitive Multi-Touch supports up to 10 points	
Touch Light Transmission	89 %	
Touch Controller	USB Type	
Input Connector	HDMI, Display Port, VGA, USB for Touch Function, OSD Keys	
Power Connector	DC Jack (Option for Phoenix connector)	
Power Type	+12V DC in (option for 9~36V DC in)	
Adapter	By Option	
Construction (Front, Rear)	Metal	
Option Features	Support WIFI6 Media Server function Bi-direction image transfer and USB signal Available Panel mount kits, Wall mount kits by option	
Dimension	387 x 235 x 46 mm	501.9 x 294.2 x 53.4 mm
Weight	3.5Kgs	4.1Kgs
Operating Temperature	0°C ~ 45°C (32°F ~ 113°F)	
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)	

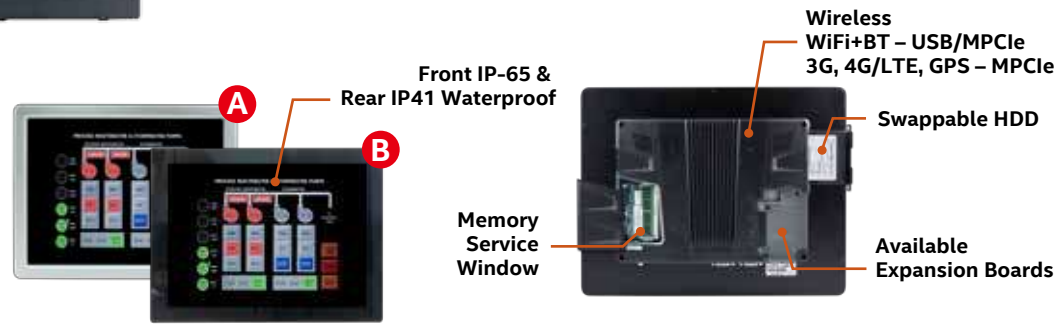
Industrial Monitor/Industrial Display

Model Number	ARC-10W00	ARC-1200	ARC-1500	ARC-15W00	ARC-1700	ARC-21W00
LCD Size	10.1"	12.1"	15"	15.6"	17"	21.5"
Display Type	WXGA	XGA	XGA	WXGA	SXGA	FHD
Resolution	1280 x 800	1024 x 768	1024 x 768	1366 x 768	1280 x 1024	1920 x 1080
Pixel Pitch	0.1695 x 0.1695 mm	0.240 x 0.240 mm	0.297 x 0.297 mm	0.252 x 0.252 mm	0.264 x 0.264 mm	0.24795 x 0.24795
Luminance	350 cd/m ²	600 cd/m ²	300 cd/m ²	300 cd/m ²	350 cd/m ²	250 cd/m ²
Contrast Ratio	800	1000	2000	500	800	3000
Viewing Angle	85 (U), 85 (D), 85 (L), 85 (R)	88 (U), 88 (D), 88 (L), 88 (R)	88 (U), 88 (D), 88 (L), 88 (R)	80 (U), 80 (D), 80 (L), 80 (R)	60 (U), 88 (D), 88 (L), 88 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	25ms	25ms	23ms	8ms	30ms	18ms
Backlight	LED					
Touch Type	Projective Capacitive					
Touch Light Transmission	88%					
Touch Controller	USB Type					
Input Connector	HDMI, Display Port, VGA, USB for Touch Function, OSD Keys					
Power Connector	DC Jack (Option for Phoenix connector)					
Power Type	+12V DC in (option for 9~36V DC in)					
Adapter	input: 100 ~ 240Vac/ 50 ~ 60Hz/ Output: 60W Adapter (12V @ 5A Adapter)					
Construction (Front, Rear)	Full Flat Die Casting with Cover Lens/ Metal Default with Panel mount kits					
Option Features	Support WIFI6 Media Server function Bi-direction image transfer and USB signal					
Dimension	282.36 x 201 x 61.4 mm	293.77 x 226.31 x 61.5 mm	350.5 x 274.5 x 63.5 mm	391.21 x 239.21 x 68 mm	392.5 x 325.11 x 70.15 mm	538.05 x 341.05 x 71 mm
Weight	1.2 kg	1.8 kg	3 kg	3.7 kg	4.9 kg	6.2 kg
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)					
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)					

Rugged Human Machine Interface

A 5-Wire Resistive Touch

B Projective Capacitive Multi-Touch (Full Flat design)



Available Expansion Boards



Rugged Human Machine Interface - ARC Series					
Model Number	ARC-1238	ARC-1538	ARC-1738	ARC-1235	ARC-1535
LCD Size	12.1"	15"	17"	12.1", 4:3	15", 4:3
Display Type	XGA	XGA	SXGA	XGA	XGA
Resolution	1024 x 768	1024 x 768	1280 x 1024	1024 x 768	1024 x 768
Pixel Pitch	0.240x0.240 mm	0.297 x 0.297 mm	0.264 x 0.264 mm	0.240 x 0.240 mm	0.297 x 0.297 mm
Luminance	600 cd/m ²	300 cd/m ²	350 cd/m ²	600 cd/m ²	300 cd/m ²
Contrast Ratio	1000	2000	800	1000	2000
Viewing Angle	88 (U), 88 (D), 88 (L), 88 (R)	88 (U), 88 (D), 88 (L), 88 (R)	60 (U), 88 (D), 88 (L), 88 (R)	88 (U), 88 (D), 88 (L), 88 (R)	88 (U), 88 (D), 88 (L), 88 (R)
Response Time	25ms	23ms	30ms	25ms	23ms
Backlight	LED	LED	LED	LED	LED
Touch Type	A Model: 5-Wire Resistive Touch B Model: Projective Capacitive Multi-Touch (Full Flat design)				
Touch Light Transmission	5-Wire Resistive Touch: 80%, Projective Capacitive Multi-Touch: 89%				
Touch Controller	A Model: Onboard USB touch (PenMount); B Model: External USB controller				
SBC	ARC-TGLU		ARC-EHL		
Processor	On board 11th Gen. Intel®Core™ i7/i5/i3/Celeron BGA Processor		Onboard Intel® Pentium®/Celeron®/Atom™ SoC BGA Processor		
I/O Chipset	EC (IT8528VG-I/FX)		EC ITE IT5571		
System Memory	Single 260-pin DDR4 SODIMM Socket, Supports Up to 32GB DDR4 3200MTs SDRAM				
Expansion	1 x M.2 Key-E 2230 for Wi-Fi & BT Module 1 x M.2 Key-B 2242/3042/3052 for SATA3/ PCIeIII x1/ USB3.1				
Storage	1 x M.2 Key-B 2242/3042/3052 for SATA3/ PCIeIII x1/ USB3.1 or 1 x 2.5" Drive Bay (7mm HDD Restricted)				
USB	4 x USB 3.1 Gen.2				
COM Port	1 x RS-232/422/485, selectable by BIOS, RS-485 supports Auto Flow, Pin-9 selected by Ring/+5V/+12V 1 x RS-232				
Other	3 x Knockouts for Antenna Mounting				
Display Chipset	Intel® 11th Generation CPU integrated		Intel® Elkhart Lake SoC Processor integrated Gen11 LP graphics		
Display Resolution	HDMI: Max. resolution 4096 x 2160 @ 24Hz (optional by IET module)		HDMI: Max. resolution 1920 x 1200 @ 60Hz (optional by IET module)		
Audio	Realtek ALC897				
Audio Interface	2 x 2W Speakers				
Ethernet	1 x Intel® I210IT PCI-e Gigabit Ethernet, 1 x Intel® I225LM 2.5 Gigabit Ethernet		1 x Intel® I225LM, 1 x I211 for standard temperature 1 x Intel® I225-IT, 1 x I210 for wide temperature		
Power Connector	Lockable DC Jack, +12~26V		Lockable DC Jack, +9~36V		
Power Type	AT/ATX (ATX is default setting)				
Adapter	input: 100 ~ 240Vac/ 50 ~ 60Hz/ Output: 60W Adapter (12V @ 5A Adapter)				
Construction (Front, Rear)	A Model: Front Metal, Rear Aluminum Die Casting B Model: Aluminum Die Casting				
Operating Temperature	-10°C ~ 50°C (14°F~122°F)		A Model: -20°C ~ 60°C (-4°F~140°F) B Model: -10°C ~ 50°C (14°F~122°F)		
Storage Temperature	-20°C ~ 60°C (-4°F~140°F)		-30°C ~ 70°C (-22°F~158°F)		
Certification	CE, FCC Class B				
OS Information	Windows 10, Linux				
Dimension	284 x 223 x 46mm	350 x 274 x 53.1 mm	382 x 320 x 58.8 mm	284 x 223 x 46 mm	350 x 274 x 53.1 mm
Weight	2.4Kg	3.7 Kg	4.56 Kg	2.4 Kg	3.7 Kg

Rugged Human Machine Interface - ARC Series				
Model Number	ARC-1033	ARC-1233	ARC-1533	ARC-1733
LCD Size	10.4", 4:3	12.1", 4:3	15", 4:3	17", 4:3
Display Type	XGA	XGA	XGA	SXGA
Resolution	1024x768	1024 x 768	1024 x 768	1280 x 1024
Pixel Pitch	0.0685mm (H) x 0.2055mm (V)	0.1905mm (H) x 0.1905mm (V)	0.297mm (H) x 0.297mm (V)	0.264mm (H) x 0.264mm (V)
Luminance	500 cd/m ²	600 cd/m ²	400 cd/m ²	350 cd/m ²
Contrast Ratio	1200	700	700	800
Viewing Angle	88 (U), 88 (D), 88 (L), 88 (R)	70 (U), 70 (D), 80 (L), 80 (R)	70 (U), 70 (D), 80 (L), 80 (R)	80 (U), 80 (D), 85 (L), 85 (R)
Response Time	25 ms	16 ms	16 ms	30 ms
Backlight	LED			
Touch Type	A Model: 5-Wire Resistive Touch B Model: Projective Capacitive Multi-Touch (Full Flat design)			
Touch Light Transmission	5-Wire Resistive Touch: 80% Projective Capacitive Multi-Touch: 89%			
Touch Controller	A Model: Onboard USB touch (PenMount); B Model: EETI External USB controller			
SBC	ARC-APL			
Processor	Onboard Intel® Apollo Lake-I/M processor			
I/O Chipset	EC ITE IT8528E			
System Memory	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB			
Expansion	1 x Mini PCIe Supports mSATA, 1 x Optional 80-pin Expansion			
Storage	1 x 2.5" Drive Bay (7mm HDD Restricted)			
USB	4 x USB 3.0			
COM Port	1 x RS-232/422/485 (Factory Optional), 1 x RS-232			
Other	1 x WiFi (Option), 3 x Knockouts for Antenna Mounting			
Display Chipset	Intel® Apollo Lake SoC Processor Integrated Gen9 LP graphics Supports optional dual display			
Display Resolution	HDMI: Max. resolution 3840 x 2160 @ 30Hz (optional by IET module)			
Audio	Realtek ALC892			
Audio Interface	2 x 2W Speaker out			
Ethernet	2 x Intel® I210IT (Apollo Lake I), 2 x Intel® I211AT (Apollo Lake M)			
Power Connector	Lockable DC Jack, +9V ~ +36V			
Power Type	AT/ATX (ATX is default setting)			
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz, Output: 60W Adapter (12V @ 5A Adapter)			
Construction (Front, Rear)	Aluminum Die Casting			
Operating Temperature	(N3350/N4200/J3455 CPU) -10°C ~ 50°C (14°F ~ 122°F) (E3900 CPU) -20°C ~ 60°C (-4°F ~ 140°F)			
Storage Temperature	(N3350/N4200/J3455 CPU) -20°C ~ 60°C (-4°F ~ 140°F) (E3900 CPU) -30°C ~ 70°C (-22°F ~ 158°F)			
Certification	CE, FCC Class B			
OS Information	Win 10, Linux			
Dimension	259.6 x 195.8 x 46 mm	284 x 223 x 46 mm	350 x 274 x 53.1 mm	382 x 320 x 58.8 mm
Weight	1.67 kg	2.4 kg	3.7 kg	4.56 kg



Rugged Human Machine Interface



RISC Panel PC

Rugged Human Machine Interface - ARC Wide Series

Model Number	ARC-10W33	ARC-15W33	ARC-21W33	ARC-15W32	ARC-21W34
LCD Size	10.1", 16:10	15.6", 16:9	21.5"	15.6", 16:9	21.5"
Display Type	WXGA	WXGA	Full HD	WXGA	Full HD
Resolution	1280 x 800	1366 x 768	1920 x 1080	1366 x 768	1920 x 1080
Pixel Pitch	0.1695mm x 0.1695mm	0.252mm (H) x 0.252mm (V)	0.248 x 0.248	0.252mm (H) x 0.252mm (V)	0.248 x 0.248
Luminance	350 cd/m ²	300 cd/m ²	250 cd/m ²	300 cd/m ²	250 cd/m ²
Contrast Ratio	800	500	3000	500	3000
Viewing Angle	85 (U), 85 (D), 85 (L), 85 (R)	80 (U), 80 (D), 80 (L), 80 (R)	89 (U), 89 (D), 89 (L), 89 (R)	80 (U), 80 (D), 80 (L), 80 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	25 ms	8 ms	18 ms	8 ms	18ms
Backlight	LED	LED	LED	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
Touch Light Transmission	88%	88%	89%	88%	89%
Touch Controller	USB touch (EETI)	USB touch (EETI)	USB interface, EETI	USB touch (EETI)	USB interface, EETI
SBC	ARC-APL			ARC-SKLU	ARC-KBLU
Processor	Intel® Celeron® N3350/J3455 Processor			6th Gen Intel® Core™ i5-6300U, 2-Core, 2.4GHz processor	7th Gen Intel® Core™ i5-7300U, 2-Core, 2.6GHz processor
I/O Chipset	EC ITE IT8528E			EC ITE IT8528E	
System Memory	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB			1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	
Expansion	1 x Mini PCIe Supports mSATA, 1 x Optional 80-pin Expansion			1 x Mini PCIe Supports mSATA, 1 x Optional 80-pin Expansion	
Storage	1 x 2.5" Drive Bay (7mm HDD Restricted)			1 x 2.5" Drive Bay (7mm HDD Restricted)	
USB	4 x USB 3.0			4 x USB 3.0	
COM Port	1 x RS-232/422/485, 1 x RS-232			1 x RS-232/422/485, 1 x RS-232	
Other	1 x WiFi (Option), 3 x Knockouts for Antenna Mounting			1 x WiFi (Option), 3 x Knockouts for Antenna Mounting	
Display Chipset	Intel® HD Graphics 500			Intel® HD Graphics 520	
Display Resolution	HDMI: Max. resolution 3840 x 2160 @ 30Hz (Optional by IET module)			HDMI: Max. resolution 4096 x 2160 @ 24Hz (Optional by IET module)	
Audio	Realtek ALC892			Realtek ALC892	
Audio Interface	2 x 2W Speaker Out			2 x 2W Speaker Out	
Ethernet	2 x Intel® I211AT			1 x Intel® I210AT 1 x Intel® I219LM	
Power Connector	Lockable DC Jack, +9V ~ +36V			Lockable DC Jack, +12V ~ +26V	
Power Type	AT/ATX (ATX is default setting)			AT/ATX (ATX is default setting)	
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)			Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)	
Construction (Front, Rear)	Metal with cover lens, Black Diet Casting			Metal with cover lens, Black Diet Casting	
Operating Temperature	-10°C ~ 50°C (14°F ~ 122°F)			-10°C ~ 50°C (14°F ~ 122°F)	
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)			-20°C ~ 60°C (-4°F ~ 140°F)	
Certification	CE, FCC Class B			CE, FCC Class B	
OS Information	Win 10, Linux			Win7, Win10, Linux	Win10, Linux
Dimension	253.3 x 176.4 x 46 mm	385.3 x 240.3 x 49.8 mm	537.9 x 329.4 x 55.9 mm	385.3 x 240.3 x 49.8 mm	537.9 x 329.4 x 55.9 mm
Weight	2 kg	4 kg	7.3 kg	4 kg	7.3 kg

Rugged Human Machine Interface - FPC Series

Model Number	FPC-08W29	FPC-10W09
LCD Size	8"	10.1"
Display Type	WSVGA	WSVGA
Resolution	1024 x 600	1024 x 600
Pixel Pitch	0.1725mm (W) x 0.1656mm (H)	0.2175mm (W) x 0.2088mm (H)
Luminance	500 cd/m ²	350 cd/m ²
Contrast Ratio	700	500
Viewing Angle	70 (U), 75 (D), 75 (L), 75 (R)	70 (U), 70 (D), 70 (L), 70 (R)
Response Time	20 ms	20 ms
Backlight	LED	LED
Touch Type	5-Wire Resistive	5-Wire Resistive
Touch Light Transmission	80 %	80 %
Touch Controller	Onboard USB touch (PenMount)	Onboard USB touch (PenMount)
SBC	ECM-BYT	
Processor	Intel® Atom™ E3845 4-Core 1.91GHz processor	
System Chipset	Intel® Valleyview SoC	
I/O Chipset	Nuvoton W83627DHG-P	
System Memory	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB	
Expansion	1 x Mini PCIe Supports mSATA	
Storage	1 x CompactFlash Type I/II Socket (CF-SATA optional)	2.5" SSD/HDD or Type I/II CF card
I/O	3 x USB 2.0, 1 x USB 3.0 1 x RS-232/422/485, 1 x RS-232	4 x USB 2.0, 1 x USB 3.0 1 x RS-232/422/485
Display Chipset	Intel® Valleyview SoC Integrated Graphics Supports dual display	
Display Resolution	VGA: Max. resolution 2560x1080 @ 60Hz HDMI: Max. resolution 1920x1200 @ 60Hz	
Audio	Realtek ALC892 Support 5.1-CH	
Ethernet	2 x Intel® I211AT	2 x Intel® I211AT
Power Type	AT/ATX (ATX is default setting), Lockable DC Jack, +12V ~ +26V (12V @ 5A Adapter)	
Construction (Front, Rear)	Metal, Aluminum + Metal	
Dimension	225 x 129 x 43.4 mm	300 x 195 x 56 mm
Weight	1.27 Kg	1.50 Kg
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	
Storage Temperature	-10°C ~ 50°C (14°F ~ 122°F)	
Certification	CE, FCC Class B	
OS Information	Win 7, Win 8, Linux, Win10	

RISC Panel PC

Model Number	BFC-07R1
Resolution	1024 x 800
Pixel Pitch	0.117 (H) x 0.117 (V)
Luminance	400 cd/m ²
Touch Type	Projective Capacitive
Touch Light Transmission	85 %
Touch Controller	USB touch (SIS)
Processor	NXP i.MX6 Quad
System Memory	1 x Onboard DDR3 1GB
Storage	1 x On board 4GB eMMC
External I/O Connector	1 x USB2.0 Type A (Double deck), 1 x HDMI, 1 x 10/100/1000 LAN RJ45, Optional Powered LAN support (IEEE 802.3at), 1 x Micro SD socket 1 x RS232, or Optional Debug port 1 x speaker 1 x MIC
Power Requirement	12 ~ 26V DC input, 2.5mm DC Jack, typical 19V input With brownout detection or Powered LAN (optional)
Operating Temperature	-20°C ~ 55°C (-4°F ~ 131°F)
Storage Temperature	-30°C ~ 70°C (-22°F ~ 158°F)
Dimension (L x W x H)	184.3 x 124.3 x 30.5 mm
Weight	1.5 kg
Certification	CE, FCC Class B
Software Support	Android 6.0



Light Industrial Panel PC



Light Industrial Panel PC

Light Industrial Panel PC - CCD Series

Model Number	CCD-07W01	CCD-10W01
LCD Size	7"	10.1"
Display Type	WXGA	WXGA
Resolution	1024 x 600	1280 x 800
Pixel Pitch	0.1178 x 0.1178 mm	0.1695 x 0.1695 mm
Luminance	300 cd/m ²	350 cd/m ²
Contrast Ratio	500	800
Viewing Angle	85 (U), 85 (D), 85 (L), 85 (R)	85 (U), 85 (D), 85 (L), 85 (R)
Response Time	20ms	30 ms
Backlight	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive
Touch Light Transmission	75%	86%
SBC	CCQ5I	CCQ5J
Processor	Intel® Atom™ Z3735F 1.33GHz	
I/O Chipset	Intel® Atom™ SoC Integrated	
Memory	2GB DDR3L Memory on board	
Storage	32GB eMMC on board	
Graphics	Intel® Gen7 HD Graphic core	
HDMI Resolution	HDMI up to 1080p @ 30Hz	
USB Port	2 x USB 2.0 (Type A)	
Audio	1 x Line-Out, 2 x Speaker	
Other	1 x Camera, 1 x Microphone	
Ethernet	1 x Fast Ethernet, 10/100 Mbps	
Wi-Fi	802.11 b/g/n Built-in	
Bluetooth	Bluetooth 4.0 Built-in	
Power Connector	DC-in jack, 12 ~ 24V DC	
Power Type	AT	
Adapter	Input: 100 ~ 240 Vac/ 50 ~ 60Hz; Output: 40W Adapter (19V @ 2.1A Adapter)	
Construction/Color	Plastic, White	
Mounting	VESA 75 x 75	
Dimension	191 x 124 x 33mm	261 x 181 x 34mm
Weight	580g	800g
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	
Operating Humidity	5% ~ 90% Relative Humidity, Non-Condensing	
Certification	CE, FCC Class B	
OS Information	Win 10 IoT, Linux Ubuntu 16.04, Android 5.1	

Light Industrial Panel PC - Venus Series

Model Number	VNS-10W01	VNS-15W01
LCD Size	10.1"	15.6"
Display Type	WXGA	Full HD
Resolution	1280 x 800	1920 x 1080
Pixel Pitch	0.1695 (H) x 0.1695 (V) mm	0.17925 (H) x 0.17925 (V) mm
Luminance	350 cd/m ²	220 cd/m ²
Contrast Ratio	800	500
Viewing Angle	85 (U), 85 (D), 85 (L), 85 (R)	20 (U), 45 (D), 45 (L), 45 (R)
Response Time	30ms	8ms
Backlight	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive
Touch Light Transmission	86%	86%
Touch Controller	I ² C interface	USB interface
SBC	DNA 50	DNA 30
Processor	Intel® Atom™ x5-Z8350: 2M Cache, up to 1.92 GHz	
System Chipset	Intel® Atom™	
System Memory	2GB DDR3L RAM / option: 4GB for win 10 & Ubuntu 19.04	
Storage	32GB eMMC / option: 64GB for win 10 & Ubuntu 19.04	
USB	2 x USB 2.0 Type A	
COM Port	1 x RJ45 for RS232 or RS422 or RS485	
Other	Touch Button for Power/ Brightness/ Volume, 1 x 3.5mm Audio Jack, NFC, Cam 2.0 MP, LED indicating bar	Touch Button for Power/ Brightness/ Volume, 1 x 3.5mm Audio Jack, NFC, Cam 2.0 MP, LED indicating bar, Reading Light x2, Smart card reader
Display Chipset	Intel® HD Graphics 400	
Display Resolution	LVDS: Max. resolution 1280 x 800	eDP: Max. resolution 1920 x 1080
Audio	Realtek ALC 5645	
Audio Interface	Mic-In and Line-Out, 2 x 2W Speaker Output	
Ethernet	Realtek RTL8111H-CG	
Power Connector	DC Jack+12~24V DC in / Powered LAN	
Power Type	AT	
Adapter	Input: 100 ~ 240 Vac / 50~ 60Hz; Output: 60W Adapter (12V / 5A Adapter)	
Construction (Front, Rear)	White Plastic w/ antibacterial	
Dimension	270 x 193 x 28 mm	410 x 269 x 38 mm
Weight	1.1 kg	2.5 kg
Certification	CE, FCC Class B	CE, FCC Class B



Light Industrial Panel PC



Light Industrial Panel PC

Light Industrial Panel PC - APC Series

Model Number	APC-1733	APC-18W9	APC-2132	APC-2334
LCD Size	17.3"	18.5"	21.5"	23.8"
Display Type	Full HD	WXGA	Full HD	Full HD
Resolution	1920 x 1080	1366 x 768	1920 x 1080	1920 x 1080
Pixel Pitch	0.1989mm (H) x 0.1989mm (V)	0.300mm (H) x 0.300mm (V)	248.25um (H) x 248.25um (V)	274.5um (H) x 274.5um (V)
Luminance	300 cd/m ²	300 cd/m ²	250 cd/m ²	250 cd/m ²
Contrast Ratio	650	1000	5000	1000
Viewing Angle	70 (U), 70 (D), 60 (L), 60 (R)	80 (U), 80 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	6 ms	5 ms	18 ms	14ms
Backlight	LED	LED	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
Touch Light Transmission	80% +/- 3%	91 %	89 %	89 %
Touch Controller	USB touch (EETI)	USB touch (EETI)	USB touch (EETI)	USB touch (EETI)
SBC	EMX-APLP	EBM-BYT	ARC-SKLU	EMX-KBLUP
Processor	Intel® Apollo Lake N4200 Processor	Intel® Celeron® J1900 4-Core 2.0GHz	Intel® Core™ i7/ i5/ i3 / Celeron Processor	Intel® Core™ i7/ i5/ i3 / Celeron Processor
System Chipset	Intel® Pentium® SoC integrated	Intel® Valleyview SoC	Intel® Skylake U SoC integrated	Intel® Kabylake U SoC integrated
I/O Chipset	EC ITE IT8528	EC ITE IT8528E	EC ITE IT8518E	EC ITE IT8518E
System Memory	2 x 204-pin DDR3L 1600 & 1333MHz SO-DIMM supports up to 16GB	1 x 204-Pin DDR3L 1066/1333MHz SO-DIMM up to 8 GB	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	2 x 260-pin DDR4 2133MHz SO-DIMM supports up to 32GB
Expansion	1 x Mini PCIe Supports mSATA	1 x Mini PCIe Supports mSATA	1 x Mini PCIe dule	1 x M.2 Type B 3042/2242/2260/2280, 1 x M.2 Type A 2230 support WiFi module
Storage	1 x mSATA	1 x CompactFlash Type I/II Socket 1 x 2.5" Drive Bay	1 x 2.5" Drive Bay 1 x mSATA (by mini PCIe)	1 x 2.5" Drive Bay 1 x M.2 Type B 3042/2242/2260/2280
USB	4 x USB 3.0	1 x USB 2.0, 1 x USB 3.0	4 x USB 3.0, 2 x USB 2.0 (by IET module)	4 x USB 3.0
COM Port	N/A	1 x RS-232/422/485	1 x RS-232/422/485, 1 x RS-232	N/A
Display Chipset	Intel® Pentium® SoC integrated Graphics	Intel® Valleyview SoC integrated Graphics Supports dual display	Intel® Skylake SoC integrated Graphics Supports dual display	Intel® Kabylake SoC integrated Graphics Supports dual display
Audio	Realtek ALC662 supports 2-CH	Realtek ALC892 Support 5.1-CH	Realtek ALC892 supports 5.1-CH	Realtek ALC892 supports 5.1-CH
Audio Interface	Mic-In, Line-In and Line-Out	Line-Out	1 x Line out, 1 x Mic in (by IET module)	1 x Line out, 1 x Mic in
Ethernet	2 x Intel® I211AT Gigabit Ethernet	2 x Intel® I211AT	1 x Intel® I211AT, 1 x Intel® I219LM	1 x Intel® I211AT, 1 x Intel® I219LM
Power Connector	DC Jack, +12V ~ +24V	Lockable DC Jack, +12V ~ +26V	Lockable DC Jack, +12V ~ +26V	Lockable DC Jack, +12V ~ +24V
Power Type	AT / ATX	AT / ATX	AT / ATX	AT / ATX
Adapter	AC/DC Adapter 100~240V 50~60Hz, 12V/5A	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)	Input:100 ~ 240Vac/ 50 ~ 60Hz Output:72W Adapter (19V @ 3.78A Adapter)	Input:100 ~ 240Vac/ 50 ~ 60Hz Output:72W Adapter (19V @ 3.78A Adapter)
Construction (Front, Rear)	White Plastic	Black Coverlens, Black	Plastic-black	Plastic-black
Dimension	505 x 336 x 54.5 mm	443 x 290 x 59 mm	539.6 x 342.6 x 45.5 mm	592 x 382 x 49.5 mm
Weight	4.7 Kg	4.54 Kg	6.3 Kg	7.2 Kg
Operating Temperature	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)
Storage Temperature	-20°C ~ 65°C (-4°F ~ 149°F)	-10°C ~ 50°C (14°F ~ 122°F)	-10°C ~ 60°C (14°F ~ 140°F)	-10°C ~ 60°C (14°F ~ 140°F)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B
OS Information	Win 10	Win 7, Win 8, Linux	Win 7, Win 8.1, Win 10, Linux	Win 10, Linux

Light Industrial Panel PC - PPC Series

Model Number	PPC-1529	PPC-1729	PPC-2129
LCD Size	15", 4:3	17", 4:3	21.5"
Display Type	XGA	SXGA	Full HD
Resolution	1024 x 768	1280 x 1024	1920 x 1080
Pixel Pitch	0.297mm (H)x0.297mm (V)	0.264mm (H)x0.264mm (V)	0.248mm (H)x0.248mm (V)
Luminance	250 cd/m ²	350 cd/m ²	250 cd/m ²
Contrast Ratio	700	800	1000
Viewing Angle	70 (U), 70 (D), 80 (L), 80 (R)	80 (U), 80 (D), 85 (L), 85 (R)	80 (U), 80 (D), 85 (L), 85 (R)
Response Time	16 ms	30 ms	5 ms
Backlight	LED	LED	LED
Touch Type	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive
Touch Light Transmission	80 %	80 %	80 %
Touch Controller	Onboard USB touch (EETI)		
SBC	EBM-BYT		
Processor	Intel® Celeron® J1900 4-Core 2.0GHz processor		
System Chipset	Intel® Valleyview SoC		
I/O Chipset	EC ITE IT8528E		
System Memory	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB		
Expansion	1 x Mini PCIe Supports mSATA		
Storage	1 x CompactFlash Type I/II Socket, 1 x 2.5" Drive Bay		
USB	1 x USB 3.0, 3 x USB 2.0		
COM Port	1 x RS-232/422/485		
Display Chipset	Intel® Valleyview SoC Integrated Graphics Supports dual display		
Display Resolution	HDMI: Max. resolution 1920 x 1200 @ 60Hz		
Audio	Realtek ALC892 Support 5.1-CH		
Audio Interface	Line-Out		
Ethernet	2 x Intel® I210IT		
Power Connector	Lockable DC Jack, +12V ~ +26V		
Power Type	AT/ATX (ATX is default setting)		
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)		
Construction (Front, Rear)	White Plastic, Gray Plastic		
Dimension	351 x 319 x 54 mm	391.5 x 364.5 x 59 mm	542 x 382 x 63 mm
Weight	4.9 kg	5.9 kg	7.2 kg
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)		
Storage Temperature	-10°C ~ 50°C (14°F ~ 122°F)		
Certification	CE, FCC Class B		
OS Information	Win 7, Win 10, Linux		

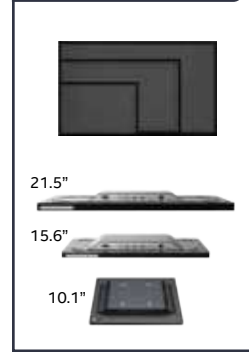
Light Industrial Panel PC



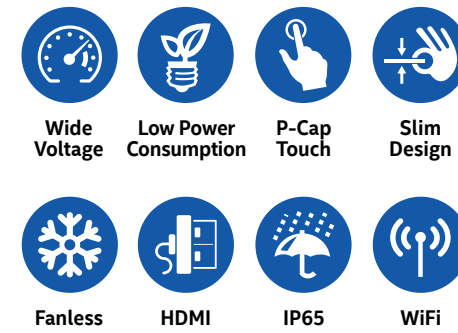
10.1" System Dimensions



All Sizes Overview



21.5" with Stand



Benefits of Consumer Products

- Stylish Design - Affordable Price



Advantage of Industrial Products

- Durability - Longevity Support



Light Industrial Panel PC - SID Series

Model Number	SID-10W9	SID-15W9	SID-21W9
LCD Size	10.1"	15.6"	21.5"
Display Type	WXGA	Full HD	Full HD
Resolution	1280 x 800	1920 x 1080	1920 x 1080
Pixel Pitch	0.1695 x 0.1695 mm	0.17925 x 0.17925 mm	0.24795 x 0.24795 mm
Luminance	350 cd/m ²	220 cd/m ²	250 cd/m ²
Contrast Ratio	800	700	3000
Viewing Angle	85 (U), 85 (D), 85 (L), 85 (R)	85 (U), 85 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	30 ms	35ms	30ms
Backlight	LED	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive	Projective Capacitive
Touch Light Transmission	86%	85%	88%
SBC	BCX12	BCX11	BCX11
Processor		Intel® Atom™ Z3735F 1.33GHz	
I/O Chipset		Intel® Atom™ SoC Integrated	
Memory		2GB DDR3L Memory on board	
Storage		32GB eMMC on board	
Graphics		Intel® Gen7 HD Graphic core	
HDMI Resolution		HDMI up to 1080p@30Hz	
USB Port		2 x USB 2.0 (Type A)	
Serial Port	N/A	1 x RS-232	1 x RS-232
Audio Interface		1 x Line-Out	
Ethernet		1 x Fast Ethernet, 10/100 Mbps	
Wi-Fi		802.11 b/g/n Built-in	
Bluetooth		Bluetooth 4.0 Built-in	
Power Connector		DC-in jack, 12 ~ 24V DC	
Power Type		AT	
Adapter		Input: 100 ~ 240 Vac/ 50 ~ 60Hz; Output: 65W Adapter (19V @ 3.42A Adapter)	
Construction/Color		Metal, Black	
Mounting	VESA 75 x 75	VESA 100 x 100	VESA 100 x 100
Dimension	255.2 x 169.4 x 33.3 mm	391 x 249 x 37 mm	505 x 303.3 x 41.7 mm
Weight	1.2 KG	2.4 KG	5.5 KG
IP Rating		Front IP65	
Operating Temperature		0°C ~ 40°C (32°F ~ 104°F)	
Operating Humidity		5% ~ 90% Relative Humidity, Non-Condensing	
Certification		CE, FCC Class B	
OS Information		Win 10 IoT, Linux Ubuntu 16.04, Android 5.1	

Light Industrial Panel PC - SID Series

Model Number	SID-10W03	SID-15W03	SID-10WR1	SID-15WR1
LCD Size	10.1"	15.6"	10.1"	15.6"
Display Type	WXGA	Full HD	WXGA	Full HD
Resolution	1280 x 800	1920 x 1080	1280 x 800	1920 x 1080
Pixel Pitch	0.1695 x 0.1695 mm	0.17925 x 0.17925 mm	0.1695 x 0.1695 mm	0.17925 x 0.17925 mm
Luminance	350 cd/m ²	220 cd/m ²	350 cd/m ²	220 cd/m ²
Contrast Ratio	800	800	800	800
Viewing Angle	85 (U), 85 (D), 85 (L), 85 (R)	85 (U), 85 (D), 85(L), 85 (R)	85 (U), 85 (D), 85 (L), 85 (R)	85 (U), 85 (D), 85(L), 85 (R)
Response Time	30 ms	30ms	30ms	30ms
Backlight	LED	LED	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
Touch Light Transmission	86%	85%	86%	85%
SBC	ACP-CHT3	ACP-CHT3	ACP-RK3288	ACP-RK3288
Processor		Intel® Atom™ x5-Z8350 1.44GHz		Rockchip RK3288 1.6GHz
I/O Chipset		Intel® Atom™ SoC Integrated		Rockchip SoC Integrated
Memory		2GB / 4GB DDR3L Memory on board		2GB DDR3L Memory on board
Storage		32GB / 64GB eMMC on board		16GB eMMC on board
Graphics		Intel® Gen8 HD Graphic core		ARM Mali-T764 GPU core
HDMI Resolution		HDMI up to 1080p@60Hz		HDMI up to 1080p@120Hz
USB Port		1 x USB 3.0 (Type A), 1 x USB 2.0 (Type A)		2 x USB 2.0 (Type A)
Serial Port		1 x RS-232		1 x RS-232
Audio Interface		1 x Line-Out		1 x Line-Out
Ethernet		1 x Fast Ethernet, 10/100 Mbps		1 x Gigabit Ethernet, 10/100/1000 Mbps
Wi-Fi		802.11ac/b/g/n Built-in		802.11 b/g/n Built-in
Bluetooth		Bluetooth 5.0 Built-in		Bluetooth 4.0 Built-in
Power Connector		DC-in jack, 12 ~ 24V DC		DC-in jack, 12 ~ 24V DC Powered LAN optional
Power Type		AT/ATX (AT is default setting)		AT/ATX (AT is default setting)
Adapter		Input: 100 ~ 240 Vac/ 50 ~ 60Hz; Output: 60W Adapter (12V @ 5A Adapter)		Input: 100 ~ 240 Vac/ 50 ~ 60Hz; Output: 60W Adapter (12V @ 5A Adapter)
Construction/Color		Metal, Black		Metal, Black
Mounting	VESA 75 x 75	VESA 100 x 100	VESA 75 x 75	VESA 100 x 100
Dimension	255.2 x 169.4 x 40.7 mm	391.2 x 239.2 x 48.1.4 mm	255.2 x 169.4 x 40.7 mm	391.2 x 239.2 x 48.1 mm
Weight	1.36 kg	3.59 kg	1.36 kg	3.59 kg
IP Rating		Front IP65		Front IP65
Operating Temperature		0°C ~ 40°C (32°F ~ 104°F)		0°C ~ 40°C (32°F ~ 104°F)
Operating Humidity		5% ~ 90% Relative Humidity, Non-Condensing		5% ~ 90% Relative Humidity, Non-Condensing
Certification		CE, FCC Class B		CE, FCC Class B
OS Information		Win 10 IoT, Linux Ubuntu 19.04		Linux Debian 9, Android 8.1

Stainless Steel Panel PC



Super Scratch-proof Panel

SPC series offer a high level of hard glass compliant with SAA panels. It is resistant to scratches from nails, coins, keys and other sharp metal tools.



Sunlight Readable

With Avalue optical bonding technology, SPC provides sunlight-readable panel to improve the visual effects under strong sunlight



Stainless: Vandal-proof; Oil-proof

- Rust-proof; Resistance to corrosion
- Stainless
- Vandal-proof/Resistance of high temp.



Full IP65/ IP69K Design for Water-proof

- Full IP65
- Water-draining design
- IP67 Connector
- Membrane Buttons



Wide Volt./ Over Current Protection

- Flexibility
- Safety
- Over Current/ Surge Protection

Stainless Steel Panel PC - SPC Series

Model Number	ODC-1533	SPC-1533	SPC-2133
LCD Size	15", 4:3	15", 4:3	21.5"
Display Type	XGA	XGA	WSXGA
Resolution	1024 x 768	1024 x 768	1920 x 1080
Pixel Pitch	0.297mm(H) x 0.297mm(W)	0.297mm (H) x 0.297mm (V)	248.25um (H) x 248.25um (V)
Luminance	1000cd/m ²	250 cd/m ²	250 cd/m ²
Contrast Ratio	2500	700	3000
Viewing Angle	88(U), 88 (D), 88 (L), 88 (R)	70 (U), 70 (D), 80 (L), 80 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	16 ms	16 ms	18 ms
Backlight	LED	LED	LED
Touch Type	Projective Capacitive with Anti-UV Coating, AG Coating for Cover Lens	Projective Capacitive	Projective Capacitive
Touch Light Transmission	95 % (By Optical Bonding)	87 %	89 %
Touch Controller	Onboard USB touch (EETI)	Onboard USB touch (EETI)	Onboard USB touch (EETI)
SBC	EBM-APL		
Processor	Onboard Intel® ATOM E3940 Processor	Onboard Intel® Apollo Lake Mobile Processor	
System Chipset	Intel® Apollo Lake SoC integrated		
I/O Chipset	EC ITE IT8528E		
System Memory	1 x 204-pin DDR3L 1866MTs SO-DIMM up to 8 GB		
Expansion	2 x Mini PCIe		
Storage	1 x 2.5" Drive Bay		
USB	2 x USB 2.0 (IP67 Waterproof Connector)	2 x USB 2.0 (IP67 Waterproof Connector)	3 x USB 3.0 (IP67 Waterproof Connector)
COM Port	1 x RS-232/422/485 (IP67 Waterproof Connector)		
Other	Optical Bonding, Anti-UV/IR Protection, Auto-Dimming, Light Sensor	1 x SATA II, 1 x WiFi	
Display Chipset	Intel® Apollo Lake SoC integrated Graphics Supports Dual Display		
Audio	Realtek ALC892		
Audio Interface	2 x 5W Speaker Output		
Ethernet	2 x Intel® I211AT (IP67 Waterproof Connector)		
Power Connector	4 Pin M8 Type, +12V ~ +26V		
Power Type	AT/ATX (ATX is default setting)		
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (24V @ 2.5A Adapter) AC-DC Adapter		
Construction (Front, Rear)	Powder Coating Aluminum	Silver Stainless Steel	
Operating Temperature	-20°C ~ 60°C (-4°F ~ 140°F)	0°C ~ 40°C (32°F ~ 104°F)	
Storage Temperature	-30 to 70°C (-22°F ~ 158°F)	-20°C ~ 60°C (-4°F ~ 140°F)	-10°C ~ 60°C (14°F ~ 140°F)
Certification	CE, FCC Class B		
OS Information	Win10, Linux		
IP Rating	Full IP-67, NEMA4X	Full IP-65, IP-69K	
Dimension	399 x 323 x 52.50 mm	371 x 308 x 63.6 mm	595 x 403 x 57.5 mm
Weight	5.9 Kg	6.42 kg	9 kg

Stainless Steel Panel PC - SPC Series

Model Number	SPC-1209	SPC-1509	SPC-1709	SPC-22W9
LCD Size	12.1", 4:3	15", 4:3	17", 4:3	22"
Display Type	XGA	XGA	SXGA	WSXGA
Resolution	1024 x 768	1024 x 768	1280 x 1024	1680 x 1050
Pixel Pitch	0.240mm (H) x 0.240mm (V)	0.297mm (H) x 0.297mm (V)	0.264mm (H) x 0.264mm (V)	0.282mm (H) x 0.282mm (V)
Luminance	600 cd/m ²	400 cd/m ²	350 cd/m ²	250 cd/m ²
Contrast Ratio	700	700	800	1000
Viewing Angle	70 (U), 70 (D), 80 (L), 80 (R)	70 (U), 70 (D), 80 (L), 80 (R)	80 (U), 80 (D), 85 (L), 85 (R)	80 (U), 80 (D), 85 (L), 85 (R)
Response Time	16 ms	16 ms	30 ms	5 ms
Backlight	LED	LED	LED	LED
Touch Type	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive
Touch Light Transmission	80 %	80 %	80 %	80 %
Touch Controller	Onboard USB touch (EETI)	Onboard USB touch (EETI)	Onboard USB touch (EETI)	Onboard USB touch (EETI)
SBC	EBM-BYT			
Processor	Intel® Atom™ E3845 4-Core 1.91GHz processor/ Intel® Celeron® J1900 2.0GHz processor			
System Chipset	Intel® Valleyview SoC			
I/O Chipset	EC ITE IT8528E			
System Memory	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB			
Expansion	1 x Mini PCIe Support mSATA 1 x Mini PCIe Supports SIM Card			
Storage	1 x CompactFlash Type I/II Socket 1 x 2.5" Drive Bay			
USB	2 x USB 2.0	2 x USB 2.0	3 x USB 2.0	3 x USB 2.0
COM Port	1 x RS-232			
Other	1 x SATA II, 1 x WiFi			
Display Chipset	Intel® Valleyview SoC integrated Graphics Supports dual display			
Audio	Realtek ALC892			
Audio Interface	2 x 5W Speaker Output			
Ethernet	1 x Intel® I210IT			
Power Connector	Waterproof DC Jack, +12V ~ +26V			
Power Type	AT/ATX (ATX is default setting)			
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (24V @ 2.5A Adapter) AC-DC Adapter			
Construction (Front, Rear)	Front & Rear Silver Stainless, Black			
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)			
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)			
Certification	CE, FCC Class A			
OS Information	Win10, Linux			
IP Rating	Full IP-65, IP-69K			
Dimension	311 x 272 x 58 mm	371 x 308 x 63.6 mm	405 x 353 x 66.6 mm	546 x 378 x 69 mm
Weight	4.23 kg	6.42 kg	7.5 kg	9 kg



Open Frame Panel PC



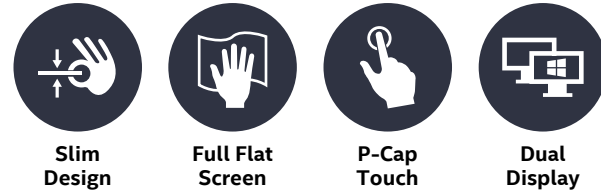
Open Frame Panel PC - OFT Series			
Model Number	OFT-07WR1	OFT-10WR1	OFT-15WR1
LCD Size	7"	10.1"	15.6"
Resolution	800 x 1280	1280 x 800	1920 x 1080
Luminance	300	350 / 1000	220
Viewing Angle	160° (H/V)	170° (H/V)	170° (H/V)
Touch Type	PCAP	PCAP	PCAP
Processor	Rockchip RK3288		
System Memory	2GB DDR3L RAM		
Wireless	802.11 b/g/n Wireless LAN		
Storage	16GB eMMC		
External I/O Connector	1 x Giga Ethernet 2 x USB 2.0 type A connectors 1 x HDMI 1.4a connector 1 x Head phone jack 1 x DC jack 1 x Reset		
Internal I/O Connector	1 x LVDS interface, 1 x MIPI interface 1 x USB Touch interface, 1 x I ² C Touch interface 1 x Micro USB client (Android only) 1 x USB CAM_DMIC interface 1 x RS232 (TX/RX), 1 x RS485 1 x GPIO (16bit) interface 1 x Speaker interface 1 x A-MIC interface 1 x Micro SD slot 1 x Touch button connector 1 x I ² C sensor interface 1 x Debug connector 1 x Battery charger connector 1 x DC input 4-pin header 1 x M.2 B-Key socket 1 x RTC battery	1 x LVDS interface 1 x eDP interface 1 x USB Touch interface 1 x Micro USB client (Android only) 1 x USB CAM_DMIC interface 1 x USB OTG 1 x RS232 (TX/RX), 1 x RS485 1 x GPIO (16bit) interface 1 x Speaker interface 1 x A-MIC interface 1 x Micro SD slot 1 x Touch button connector 1 x I ² C sensor interface 1 x Debug connector 1 x DC input 4-pin header 1 x M.2 B-Key socket 1 x RTC battery	1 x 16 bit GPIO interface 1 x USB interface 1 x LVDS interface 1 x backlight control & power 2 x speaker interface (1.2W stereo) 1 x A-MIC interface 1 x Touch button connector 1 x DC input 4pin header 1 x I ² C interface(7" & 10") 1 x RS232 (TX/RX) or RS485 1 x Micro SD slot
Power Requirement	DC 12 ~ 24V		
Power Type	DC Jack, DC input 4-pin header, optional Powered LAN 802.3AT	DC Jack, DC input 4-pin header	
Operating Temperature	0°C ~ 40°C		
Storage Temperature	-20°C ~ 60°C		
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing		
Software Support	Android 8.1		
Dimension	115.9 x 183.1 x 33.4 mm	252 x 166 x 32.7 mm / 252 x 166 x 38.2 mm	387 x 235 x 35.3 mm
Weight	0.45 kg	0.7 kg	1.5 kg
Certification	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A

Open Frame Panel PC - OFT Series				
Model Number	OFT-07W01	OFT-10W01	OFT-15W01	OFT-21W01
LCD Size	7"	10.1"	15.6"	21.5"
Resolution	800 x 1280	1280 x 800	1920 x 1080	1920 x 1080
Luminance	300	350	220	250
Viewing Angle	160° (H/V)	170° (H/V)	178° (H/V)	178° (H/V)
Touch Type	PCAP	PCAP	PCAP	PCAP
Processor	Intel® Atom™ Processor Z3735F 1.33GHz Quad Core CPU			
System Memory	2GB DDR3L RAM			
Wireless	802.11 b/g/n WiFi			
Storage	32GB or 8GB eMMC			
External I/O Connector	1 x 10/100 LAN port 2 x USB 2.0 type A connector 1 x HDMI 1.4a connector 1 x Head Phone Jack 1 x DC Jack			
Internal I/O Connector	1 x 16 bit GPIO interface 1 x USB interface 1 x LVDS interface 1 x backlight control & power 2 x speaker interface (1.2W stereo) 1 x A-MIC interface 1 x Touch button connector 1 x DC input 4pin header 1 x I ² C interface(7" & 10") 1 x RS232 (TX/RX) or RS485 1 x Micro SD slot			
Power Requirement	DC 12 ~ 24V			
Power Type	1 x DC-in Jack, 1 x DC-in header	1 x DC-in Jack, 1 x DC-in header Optional Powered LAN 802.3AT	1 x DC-in Jack, 1 x DC-in header	1 x DC-in Jack, 1 x DC-in header
Operating Temperature	0°C ~ 40°C			
Storage Temperature	-20°C ~ 60°C			
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing			
Software Support	Windows 10/ Android 4.4/ Android 5.1/ Ubuntu 16.04			
Dimension	116 x 184 x 25 mm	252 x 166 x 38 mm	387 x 235 x 38 mm	500 x 292 x 47 mm
Weight	0.5 kg	0.7 kg	1.5 kg	3 kg
Certification	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A

Open Frame Panel PC



User Centered Design



Slim Design

Full Flat Screen

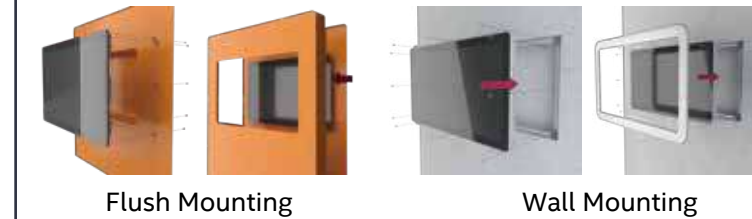
P-Cap Touch

Dual Display



- 1x Micro SD
- 1x DC Jack
- 1x Ethernet
- 2x USB 2.0
- 1x HDMI
- 1x Phone jack

Easy Mounting Solutions

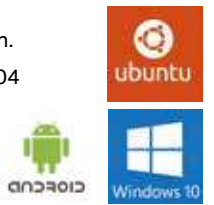


Flush Mounting

Wall Mounting

Multi-OS Support

- Windows 10 IoT enterprise 2019 LTSC entry for embedded application.
- Linux support mainly on Ubuntu 18.04
- x86 based Android support on version 8.1 & 9.0



Open Frame Panel PC - OFT Series						
Model Number	OFT-07W03	OFT-10W03	OFT-15W03	OFT-10W04	OFT-15W04	OFT-21W04
LCD Size	7"	10.1"	15.6"	10.1"	15.6"	21.5"
Resolution	800 x 1280	1280 x 800	1920 x 1080	800 x 1280	1920 x 1080	1920 x 1080
Luminance	300	350	220	350	220	250
Viewing Angle	160° (H/V)	170° (H/V)	170° (H/V)	170° (H/V)	170° (H/V)	178° (H/V)
Touch Type	PCAP	PCAP	PCAP	P-CAP	P-CAP	P-CAP
Processor	Intel® Atom™ x5-Z8350: 2M Cache, up to 1.92 GHz			Intel® Celeron® J3455 2M Cache 1.50 GHz		
System Memory	2G / 4G DDR3L RAM			1 x 204 pin SO-DIMM DDR3L 4GB		
Wireless	802.11a/b/g/n/ac Wireless LAN			802.11a/b/g/n/ac (2230)		
Storage	32G / 64G eMMC			32GB (eMMC) / M.2 3042 SSD		
External I/O Connector	1 x 10/100 Ethernet 1 x USB 2.0 / 1 x USB 3.0 type A connectors 1 x HDMI 1.4a connector 1 x Head phone jack 1 x DC jack 1 x Reset			1 x Giga LAN port 2 x USB 3.0 1 x HDMI 1 x HP jack 1 x DC jack 1 x Reset		
Internal I/O Connector	1 x LVDS interface 1 x eDP interface 1 x USB Touch interface 1 x I²C Touch interface 1 x USB CAM_DMIC interface 1 x Micro USB (Android only) 1 x RS232 (TX/RX), 1 x RS485 1 x GPIO's (16bit) interface 1 x Speaker interface 1 x A-MIC interface 1 x Micro SD slot 1 x Touch button connector 1 x I²C sensor interface 1 x Debug connector 1 x DC-in wafer 1 x M.2 3042 B-Key socket 1 x RTC battery			1 x MIPI interface 1 x eDP interface 1 x LVDS interface 1 x Amic 1 x USB 1 x SPK 1 x Touch button 1 x RS485/RS232 1 x RS232 1 x DIO 1 x Micro USB (Android only) 1 x SD card slot 1 x DC-in wafer 1 x M.2 3042 B-Key (SSD or WWAN)		
Power Requirement	DC 12 ~ 24V			DC 12V~24V		
Power Type	1 x DC-in Jack 1 x DC-in wafer			1 x DC-in Jack 1 x DC-in wafer		
Operating Temperature	0°C ~ 40°C			0°C ~ 40°C		
Storage Temperature	-20°C ~ 60°C			-20°C ~ 60°C		
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing			40°C @ 95% Relative Humidity, Non-condensing		
Software Support	Win 10 / Ubuntu 19.04			Win 10 / Ubuntu		
Dimension	120 x 180 x 33.45 mm	252 x 166 x 32.7 mm	387 x 235 x 35.3 mm	254 x 178 x 32.8 mm	384 x 254 x 36.7 mm	515 x 322 x 44.9 mm
Weight	0.5 kg	0.7 kg	1.5 kg	0.8 kg	1.7 kg	3.8 kg
Certification	CE, FCC Class A			CE, FCC Class A		

Open Frame Panel PC - OFT Series					
Model Number	OFT-07W33	OFT-15W33	OFT-21W33	OFT-15W36	OFT-21W36
LCD Size	7", 16:10	15.6", 16:9	21.5", 16:9	15.6", 16:9	21.5", 16:9
Resolution	1280 x 800	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
Luminance	300 cd/m²	220 cd/m²	250 cd/m²	220 cd/m²	250 cd/m²
Viewing Angle	89 (U), 89 (D), 89 (L), 89 (R)	85 (U), 85 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)	85 (U), 85 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Touch Type	Projective Capacitive Multi-Touch supports up to 10 points			Projective Capacitive Multi-Touch supports up to 10 points	
Processor	Onboard Intel® Celeron® N3350/J3455 SoC BGA Processor			Onboard 8th Gen Intel® Whiskey Lake U Core™ SoC i7/i5/i3 & Celeron® BGA Processor	
System Memory	Default with 4GB DDR3L Memory Option supports up to 8GB DDR3L 1600 & 1333MHz by One SO-DIMM socket (for OFT-07W33) Option supports up to 16GB DDR3L 1600 & 1333MHz by Two SO-DIMM socket (for OFT-15W/21W33)			Default with 4GB DDR3L Memory Option support up to 32GB DDR4 2400MHz by Two SO-DIMM socket	
Wireless	Option by Mini PCIe : 802.11a/b/g/n/ac Wireless LAN and Bluetooth 4.0+			Option by M.2 802.11a/b/g/n/ac Wireless LAN and Bluetooth 4.0+	
Storage	Default by 64GB mSATA by mPCIe Slot (Option for SATA interface 2.5" HDD/SSD (for OFT-15W/21W33)			Default by 64GB by M.2 slot (Option for SATA interface 2.5" HDD/SSD)	
I/O Connector	4 x USB 2.0 (option for OFT-15W/ 21W33); 2 x USB2.0 (option for OFT-07W33) 1 x RS232 (default)/ RS422/485, 4 x RS232 (option for OFT-15W/21W33) 1 x RS232 (option for OFT-07W33) 16-bit GPIO with DB9 connector (option for OFT-15W/21W33) 8-bit GPIO with DB9 connector (option for OFT-07W33)			4 x USB 3.1, 4 x USB 2.0 (option) 1 x RS232 (default)/ RS422/ 485 4 x RS232 (option, pin9 without power) 16-bit GPIO with DB9 connector(option)	
Option Features	Available Panel mount kits, Wall mount kits by option				
Power Requirement	+12V~26V DC in	+12V~24V DC in 3 pins Phoenix connector and Lockable DC Jack Extend Power Connector for on/off or Reset			
Power Type	AT/ATX (Default is AT Mode)				
Operating Temperature	0°C ~ 45°C (32°F ~ 113°F)				
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)				
Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing				
Software Support	Windows 10 IoT, Linux, x86 Android 8.1			Windows 10 IoT, Linux	
Dimension	183.1 x 115.8 x 51.6 mm	387 x 235 x 46 mm	501.9 x 296.2 x 52.4 mm	387 x 235 x 46 mm	501.9 x 296.2 x 52.4 mm
Weight	1.1 kg	2.5 Kg	4.1 Kg	2.5 Kg	4.1 Kg
Certification	CE, FCC Class A				

Desktop POS



Slim & Fanless Design



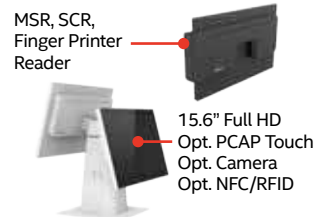
Quick Rail



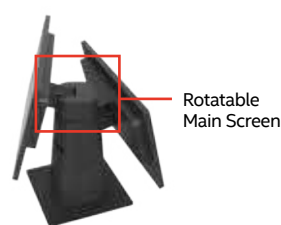
Built-in RFID/ NFC



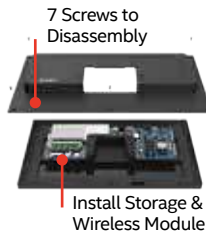
Accessories/ Customer Display



Adjustable View Angle



Easy Upgrade & Maintenance



Integrated Thermal Printer



Renity POS Solutions

An All-in-One Intelligent Fanless Point of Sale System for Small Retail Business



- 1 Optional secondary Display via HDMI or VGA
- 2 MSR Card Reader (optional) for processing ID cards or credit cards
- 3 5-wire Resistive Touch (Optional Multi-touch P Cap)
- 4 Front IP-65 & Back IP-41 Panel
- 5 1 x RJ-11 at rear I/O for Cash Drawer control, 4 x USB 2.0, optional 2 x USB on Left Side
- 6 Stand (optional) is designed for this POS system to fit in the space saving environment

New POS Terminal

Model Number	RiVar-1501	RiVar-1502
LCD Size	15.6"	15.6"
Display Type	FHD	FHD
Resolution	1920 x 1080	1920 x 1080
Pixel Pitch	0.179 x 0.179	0.179 x 0.179
Luminance	300cd/m2	300cd/m2
Contrast Ratio	700	700
Viewing Angle	89 (U), 89 (D), 89 (L), 89 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	14ms	14ms
Backlight	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive
Touch Light Transmission	85%	85%
Touch Controller	USB interface, EETI	USB interface, EETI
Processor	Intel® Celeron® Processor N3350/J3455	Intel® Celeron® Processor J3455
I/O Chipset	EC ITE IT8528E	EC ITE IT8786E
System Memory	1 x 204-pin DDR3L SODIMM Socket Up to 8GB DDR3L 1600MTs SDRAM	Default Onboard 4GB DDR4SDRAM (Option Up to 8GB)
Expansion	1 x M.2 B Key slot for mSATA module 1 x M.2 E Key slot for .2/4/5G WiFi module	1 x M.2 E Key slot for .2/4/5G WiFi module
Storage	M.2 2242 SATA 32GB, 1 x SD Card slot	Default 64GB eMMC (Option Up to 128GB)
USB	2 x USB 3.0 on bottom side of Panel, 4 x USB 3.0 on bottom side of Stand	4 x USB3.0
COM Port	2 x COM ports supported All Pin 9 supported 5V/12V 1A max output	2 x COM
Other	RJ-11 for Cash Drawer 24V Optional for Camera/ NFC/ MSR	RJ-11 for Cash Drawer 12/24V, 1 x HDMI Optional for Camera/ NFC/ MSR
Thermal Printer	SEIKO thermal printer CAPD347D-E	N/A
2nd LCD Panel	15.6" FHD 1920 x 1080 Optional for PCAP touch	N/A
Display Chipset	Intel® HD Graphics 500	Intel® HD Graphics 500
Audio	Realtek ALC892	Realtek ALC662
Audio Interface	2 x 2W	2 x 2W
Ethernet	1 x RJ45 with Intel® I211AT	2 x RJ45 with Realtek 8111H
Adapter	24V DC in 60W or 120W (Printer SKU)	24V DC in 60W
Construction (Front, Rear)	Plastic	Plastic
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)	-20°C ~ 60°C (-4°F ~ 140°F)
IP Rating	IP65 for front Panel, IP41 for Rear	IP65 for front Panel, IP41 for Rear
Certification	CE/FCC/VCCI : Class B	CE/FCC/VCCI : Class B
OS Information	Windows 10, Android 8.x, Linux	Windows 10, Android 8.x, Linux
Dimension	253 x 390 x 431 mm	391 x 251 x 44.5 mm
Weight	10 kg (Dual display mode)	2.7 Kg

POS Terminal

Model Number	Rity102	Rity122	Rity152	Rity153
LCD Size	10.1"	12.1", 4:3	15", 4:3	15", 4:3
Display Type	WXGA	XGA	XGA	XGA
Resolution	1024 x 600	1024 x 768	1024 x 768	1024 x 768
Pixel Pitch	16.7M	16.2M	16.7M	16.7M
Luminance	350 cd/m ²	600 cd/m ²	500 cd/m ²	500 cd/m ²
Contrast Ratio	500	1000	2500	2500
Viewing Angle	70 / 70 / 70 / 70	89 / 89 / 89 / 89	88 / 88 / 88 / 88	88 / 88 / 88 / 88
Response Time	16 ms	12 ms	7 ms	7 ms
Backlight	LED	LED	LED	LED
Touch Type	5-Wire Resistive/ Projective Capacitive Touch			
Touch Light Transmission	RES 80 % / PCT 85%			
Touch Controller	Onboard USB touch (PenMount) / USB touch (EETI)			
Processor	Intel® Atom™ E3845 4-Core 1.91GHz processor			Intel® Celeron® N3350 1.1GHz
System Chipset	Intel® Valleyview SoC			Intel® Apollo SoC integrated
System Memory	1 x 204-Pin DDR3L 1066MHz SO-DIMM up to 8 GB			1 x 204-Pin DDR3L 1866MHz SO-DIMM up to 8 GB
Expansion	1 x Mini PCIe Supports mSATA			1 x M.2 B Key slot for mSATA module
Storage	1 x optional SATA Slim SSD 1 x mSATA	1 x 2.5" Drive Bay, 1 x mSATA		1 x 2.5" Drive Bay 1 x M.2 B key slot
I/O	1 x USB 2.0, 3 x USB 3.0 2 x RS-232/422/485, 1 x RS-232	3 x USB 2.0, 3 x USB 3.0 2 x RS-232/422/485, 1 x RS-232		2 x USB 2.0, 4 x USB 3.0, 1 x RJ45 1 x RJ11, 2 x RS-232/422/485 1 x HDMI Output
Display Chipset	Intel® Valleyview SoC integrated Graphics Supports dual display			Intel® HD Graphics 500 Supports dual display
Audio	Realtek ALC892-GR			Realtek ALC892-GR
Audio Interface	2 x 2W Speaker Output	Line-Out 2 x 2W Speaker Output		Line-Out 2 x 2W Speaker Output
Ethernet	2 x RJ45 with Realtek 8111E			2 x Realtek 8111E
Power Connector	Mini-DIN 4P for DC in w/ lock type, +19V ~ +24V			Mini-DIN 4P for DC in w/ lock type +19V ~ +24V
Power Type	AT/ATX (ATX is default setting)			AT/ATX (ATX is default setting)
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 90W Adapter (24V @ 3.75A Adapter)			Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 90W Adapter (24V @ 3.75A Adapter)
Construction (Front, Rear)	Black/ White			Black/ White
Operating Temperature	0°C ~ 35°C (32°F ~ 95°F)			0°C ~ 40°C (32°F ~ 95°F)
Storage Temperature	-10°C ~ 60°C (14°F ~ 140°F)			-10°C ~ 60°C (14°F ~ 140°F)
Dimension (L x W x H)	260 x 178 x 42 mm	322 x 250 x 47 mm	362.1 x 290.08 x 51 mm	362.1 x 290.08 x 51 mm
Weight	1.8 kg	3 kg	4 kg	4 kg
Certifications	CE, FCC Class B, VCCI			CE, FCC Class B, VCCI
OS Information	Win 8, Win 7, POS Ready, Linux			Win 10, Linux

Mini POS Terminal

Stylish Design



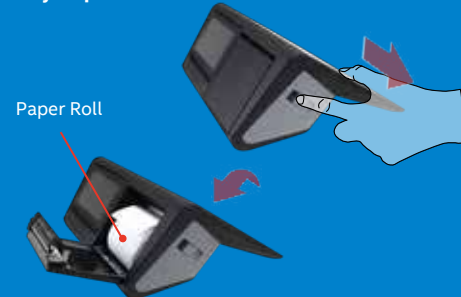
Customer Display

- 5" 2nd Display for Customer Use
- Adjustable for Best View Angle



Integrated Printer

- Support 58/80mm with Auto Cut Thermal Printer
- Pain-free Paper Roll Change
- Accessible Printer Module for Easy Replacement



Mini POS Terminal

Model Number	RiPac-10P1	RiPac-10P3	RiPac-13P3
Processor	Intel® Atom™ Z3735F 1.33GHz Processor	Intel® Celeron® N3350 1.1GHz Processor	Intel® Celeron® N3350 1.1GHz Processor
System Memory	2GB DDR3L SDRAM	4GB DDR3L SDRAM (Option for 2GB DDR3L SDRAM)	4GB DDR3L SDRAM (Option for 2GB DDR3L SDRAM)
Storage	32G (Default)/64G (Optional) eMMC	64G eMMC/ Option for 128GB	64G eMMC/ Option for 128GB
Operating System	Windows 10, Android 4.4 / 5.1	Windows 10, Android 8.1, Linux	Windows 10, Android 8.1, Linux
LCD Panel	10.1" LCD, 5" LCD (customer facing)		13.3" LCD, 5" LCD (customer facing)
Resolution	1280 x 800 (10.1"), 1280 x 720 (5")	1280 x 800 (10.1"), 1280 x 720 (5")	1920 x 1080 (13.3"), 1280 x 720 (5")
Touch Screen	Projected Capacitive Touch		
Wireless LAN	Built-in IEEE 802.11 b/g/n	IEEE 802.11 a/b/g/n/ac (Optional)	
Bluetooth	Built-in Bluetooth 4.0 + Class 1	Bluetooth 5.0 (Optional)	
Serial Port	2 x RS-232 in DB9, Powered with 5/12V		
USB Port	4 x USB2.0	4 x USB 3.0	
SD card	N/A	1 x SD card slot support up to 128GB	
LAN Port	1 x RJ45	2 x RJ45 (Realtek 8111H)	
Cash Drawer	1 x RJ11 (12V/24V)		
NFC	ISO/IEC 14443 A/B, 15693/18092		
Thermal Printer	Printing Method: Thermal Dot Line Printing Resolution: (W) 8 Dots/mm, (H) 8 Dots/mm Maximum Print Speed: 200mm/s Maximum Print Width: 72mm Maximum Paper Width: 80mm Type of Paper Cutting: Full Cut & Partial Cut		
Power Type	19.5V/ 6.15A 120W		
Dimensions	299 (L) x 316.2 (W) x 148.9 (H) mm	299 (L) x 316.2 (W) x 148.9 (H) mm	337 (L) x 300 (W) x 140.5 (H) mm
Weight	3 kg±10%	3 kg±10%	4.1 kg±10%
Operating Temperature	5°C ~ 40°C (41°F~104°F)		
Storage Temperature	-10°C ~ 60°C (14°F ~ 140°F)		
Operating Humidity	0 ~ 95% non-condensing		
Certifications	CE/FCC/VCCI/CCC		CE/FCC/VCCI

Medical Semi-Rugged Tablet

Model Number	CAXAO
Processor	Intel® Celeron® N3350 1.1GHz Processor
System Memory	Onboard 4GB LPDDR4
Storage	64GB Solid State Drive
Operating System	Windows 10
LCD Size/Resolution	10.1", WXGA/1280x800
Luminance	300 cd/m ²
Touch Screen	10 Points Projective Capacitive
Wireless LAN	802.11 a/b/g/n/ac
Bluetooth	Bluetooth 4.1
Camera	2MP Front Camera 8MP Rear Camera With Auto Focus
NFC	ISO/IEC 14443 A/B, 15693/18092, NFCIP-1, NFCIP-2, Support MIFARE and Felica
Barcode Scanner	1D/2D Barcode Scanner (Optional)
Smart Card Reader	Half-Slot, Reads ISO 7816-1, 2, 3 & 4, T=0 & T=1; 5V Smart Card Reader (Optional)
MSR	N/A
Downside I/O Connectors	1 x Audio Jack, 2 x USB 2.0 Type A, 1 x Micro SD, 1 x DC Jack, 1 x HDMI Output
Control Button	1 x Power Button, 1 x Barcode Scanner Trigger
LED Indicator	1 x Power
Power Requirement	DC Jack +19V
Battery	28.44W Li-Polymer Battery
Battery Operating Time	6 hours
Construction	Rubber + Plastic
Dimensions	281 x 193.3 x 19.95 mm
Weight	1 kg
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)
IP Rating	IP65
Certifications	CE, FCC, VCCI, CCC, BSMI, EN60601-1, EN60601-1-2

Medical Semi-Rugged Tablet Accessories

Model Number	CAXAO-DC (Desktop Cradle)	CAXAO-WM (Wall Mount Kit)	CAXAO-CS (Charging Station)
Downside I/O Connectors	3 x USB2.0, 1 x 10/100 Mbit/s RJ45 LAN		4 Bay battery slots
LED Indicator	link indicator LED		LED Indicator, Charging status for each slot
Power Requirement	DC Jack +19V		
Dimensions	180 x 198.2 x 129.2 mm	143.6 x 218.8 x 48.6 mm	159 x 105 x 57.9 mm
Weight	1.05 Kg	0.58 kg	0.62 Kg
Operating Temperature	0°C ~ 45°C (32°F~113°F)		
Storage Temperature	-10°C~60°C		
IP Rating	IPX1		N/A
Certifications	CE/ FCC		



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