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**SMART FUTURE**

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- Retail
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- Automation
- In-Vehicle
- Gaming



# 3.5" Single Board Computer



3.5" Single Board Computer				
Model Number	ECM-CFS	ECM-KBLH	ECM-SKLH	ECM-WHL
<b>Processor</b>	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)
<b>System Chipset</b>	Intel® Q370/H310 Express Chipset	Intel® QM175 Express Chipset	Intel® QM170 Express Chipset	N/A
<b>System Memory</b>	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
<b>Watchdog Timer</b>	H/W Reset, 1sec. ~ 65535sec.	H/W Reset, 1sec. ~ 65535sec.	H/W Reset, 1sec. ~ 65535sec.	H/W Reset, 1sec. ~ 65535sec.
<b>Expansion</b>	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)
<b>Storage</b>	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)
<b>I/O</b>	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
<b>Display Chipset</b>	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
<b>Resolution</b>	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
<b>Audio Chipset</b>	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-Out
<b>Ethernet Chipset</b>	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
<b>Power Requirement</b>	+12V	+12V	+12V	+12V
<b>Power Type</b>	AT/ATX	AT/ATX	AT/ATX	AT/ATX
<b>Operating Temperature</b>	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
<b>Dimension (L x W)</b>	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
<b>Processor</b>	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
<b>System Chipset</b>	N/A	N/A	N/A	N/A	N/A
<b>System Memory</b>	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
<b>Watchdog Timer</b>	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
<b>Expansion</b>	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
<b>Storage</b>	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
<b>I/O</b>	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
<b>Display Chipset</b>	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
<b>Resolution</b>	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
<b>Audio Chipset</b>	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
<b>Ethernet Chipset</b>	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
<b>Power Requirement</b>	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V
<b>Power Type</b>	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX
<b>Operating Temperature</b>	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F) -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)
<b>Dimension (L x W)</b>	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
<b>Processor</b>	Intel® Atom™/ Celeron® processor (with CPU Bottom Mounted)	Intel® Atom™/ Celeron® processor	AMD G-Series processor	AMD G-Series processor
<b>System Chipset</b>	N/A	N/A	N/A	AMD G-Series A50M Chipset
<b>System Memory</b>	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
<b>Watchdog Timer</b>	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
<b>Expansion</b>	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
<b>Storage</b>	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
<b>I/O</b>	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
<b>Display Chipset</b>	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
<b>Resolution</b>	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
<b>Audio Chipset</b>	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
<b>Ethernet Chipset</b>	2 x Realtek 8111E	2 x Intel® I211AT	2 x Realtek 8111E	2 x Realtek 8111E
<b>Power Requirement</b>	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V	+12V
<b>Power Type</b>	AT/ATX	AT/ATX	AT/ATX	AT/ATX
<b>Operating Temperature</b>	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)
<b>Dimension (L x W)</b>	5.7" x 4" (146 mm x 101 mm)			

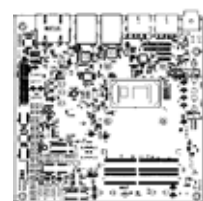
### Thin Mini-ITX

Model Number	EMX-TGLP	EMX-WHLGP	EMX-KBLU2P	EMX-SKLUP	EMX-SKLGFP
<b>Processor</b>	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
<b>System Chipset</b>	N/A	N/A	N/A	N/A	N/A
<b>System Memory</b>	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
<b>Expansion</b>	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
<b>Display</b>	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
<b>Resolution</b>	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
<b>Audio</b>	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
<b>Ethernet</b>	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
<b>USB/SATA/COM/LAN</b>	8/2/6/4	8/1/6/3	8/2/6/2	8/2/6/2	12/2/6/2
<b>Power Requirement</b>	+12V~24V	+12V~24V	+12V~24V	+12V~24V	+12V~24V
<b>Power Type</b>	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX
<b>Operating Temp.</b>	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)
<b>Dimension (L x W)</b>	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)
<b>Weight</b>	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
<b>Processor</b>	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)
<b>System Chipset</b>	N/A	N/A	N/A	N/A
<b>System Memory</b>	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
<b>Expansion</b>	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
<b>Display</b>	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
<b>Resolution</b>	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
<b>Audio</b>	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
<b>Ethernet</b>	2 x Intel® I225LM 2 x Intel® I210IT	2 x Intel I211AT	2 x Intel® I211AT	2 x Intel® I211AT
<b>USB/SATA/COM/LAN</b>	8/1/2/4	9/2/6/2	8/2/6/2	6/2/8/2
<b>Power Requirement</b>	+12V ~ 24V	+12V ~ 24V	+12V	+12V ~ 24V
<b>Power Type</b>	AT/ATX	AT/ATX	AT/ATX	AT/ATX
<b>Operating Temp.</b>	-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)
<b>Dimension (L x W)</b>	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)
<b>Weight</b>	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
<b>Processor</b>	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
<b>System Chipset</b>	N/A	Intel® C246 Chipset	Intel® H310 Chipset
<b>System Memory</b>	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
<b>Expansion</b>	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
<b>Display</b>	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
<b>Resolution</b>	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
<b>Audio</b>	Realtek Audio code Mic-in, Line-out 2 x 3W Audio Amplifier	Realtek Audio code 6W Audio Amplifier	Realtek Audio code 6W Audio Amplifier
<b>Ethernet</b>	2 x Intel® I211AT	1 x Intel® I219LM 2 x Intel® I210AT	1 x Intel® I219LM 2 x Intel® I210AT
<b>USB/SATA/COM/LAN</b>	6/2/6/2	10/2/4/3	8/2/4/3
<b>Power Requirement</b>	+12V	+12V ~ 28V	+12V ~ 28V
<b>Power Type</b>	AT/ATX	AT/ATX	AT/ATX
<b>Operating Temp.</b>	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
<b>Dimension (L x W)</b>	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)
<b>Weight</b>	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
<b>Processor</b>	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)
<b>System Chipset</b>	Intel® H310 Chipset	Intel® C246 Chipset	Intel® Q170 Chipset	
<b>System Memory</b>	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	
<b>Expansion</b>	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	
<b>Display</b>	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	
<b>Resolution</b>	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)	
<b>Audio</b>	Realtek Audio code 6W Audio Amplifier	Realtek Audio code 6W Audio Amplifier	Realtek Audio code Mic-in, Line-out, Line-in 6W Audio Amplifier	
<b>Ethernet</b>	1 x Intel® I219LM 3 x Intel® I210AT	1 x Intel® I219LM 3 x Intel® I210AT	1 x Intel® I219LM 1 x Intel® I211AT	
<b>USB/SATA/COM/LAN</b>	12/3/6/4	13/4/6/4	12/6/6/2	
<b>Power Requirement</b>	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V	
<b>Power Type</b>	AT/ATX	AT/ATX	AT/ATX	
<b>Operating Temp.</b>	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	
<b>Dimension (L x W)</b>	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)	
<b>Weight</b>	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
<b>Processor</b>	Intel® Pentium®/ Celeron®/Atom™ SoC Processor	Intel® Pentium®/ Celeron®/Atom™ SoC Processor
<b>System Chipset</b>	N/A	N/A
<b>System Memory</b>	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
<b>Expansion</b>	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
<b>Display</b>	Intel® Atom™/ Celeron®/Pentium® SoC Integrated Graphics DP++/HDMI/LVDS	Intel® Atom™/ Celeron®/Pentium® SoC Integrated Graphics HDMI + LVDS, HDM/DPI + DP, HDMI + LVDS
<b>Resolution</b>	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)
<b>Audio</b>	Realtek Audio code 2 x 3W Audio Amplifier	Realtek Audio code Mic-in, Line-out 2 x 3W Audio Amplifier
<b>Ethernet</b>	2 x Intel® I225LM 1 x Intel® I210IT	2 x Intel® I211AT
<b>USB/SATA/COM/LAN</b>	6/1/2/2	6/1/6/2
<b>Power Requirement</b>	+12V	+12V
<b>Power Type</b>	AT/ATX	ATX
<b>Operating Temp.</b>	-10~60°C (-14~140°F) -30~60°C (-22~140°F)	0°C ~ 60°C (32°F ~ 140°F)
<b>Dimension (L x W)</b>	3.93" x 2.83" (100 mm x 72 mm)	3.93" x 2.83" (100 mm x 72 mm)
<b>Weight</b>	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)
<b>Processor</b>	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)
<b>System Chipset</b>	Intel® W480E Chipset	Intel® C246 Chipset	Intel® C246 Chipset	Intel® Q170 Chipset (Co-lay C236 Chipset)
<b>System Memory</b>	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)
<b>Expansion</b>	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
<b>Display</b>	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
<b>Resolution</b>	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
<b>Audio</b>	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
<b>Ethernet</b>	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
<b>USB/SATA/COM/LAN</b>	12/4/10/3	14/6/10/2	16/4/10/2	12/6/6/2
<b>Power Requirement</b>	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5Vsb/+3.3V/-12V
<b>Power Type</b>	AT/ATX	AT/ATX	AT/ATX	AT/ATX
<b>Operating Temp.</b>	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
<b>Dimension (L x W)</b>	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)
<b>Weight</b>	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
<b>Processor</b>	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)
<b>System Chipset</b>	Intel® Q170 Chipset	Intel® H110 Chipset
<b>System Memory</b>	4 x 288-pin DDR4 2400MHz DIMM supports up to 64GB	2 x 288-pin DDR4 2400MHz DIMM supports up to 32GB
<b>Expansion</b>	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
<b>Display</b>	Intel® 6th Gen. CPU Integrated VGA + HDMI + DP	Intel® 6/7th Gen. CPU Integrated VGA + HDMI + DP
<b>Resolution</b>	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
<b>Audio</b>	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
<b>Ethernet</b>	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT
<b>USB/SATA/COM/LAN</b>	12/6/6/2	10/4/10/2
<b>Power Requirement</b>	+12V/+5V/5Vsb/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V
<b>Power Type</b>	AT/ATX	AT/ATX
<b>Operating Temp.</b>	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
<b>Dimension (L x W)</b>	12" x 9.6" (304.8 mm x 243.84 mm)	12" x 9.6" (304.8 mm x 243.84 mm)
<b>Weight</b>	1.32 lbs (0.6 kg)	1.32 lbs (0.6 kg)

Micro ATX		
Model Number	ERX-H110KP	ERX-C236KP
<b>Processor</b>	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)
<b>System Chipset</b>	Intel® H110 Chipset	Intel® C236 Chipset
<b>System Memory</b>	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)
<b>Expansion</b>	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
<b>Display</b>	Intel® 6/7th Gen. CPU Integrated HDMI + VGA, HDMI + DP, VGA + DP	Intel® 6/7th Gen. CPU Integrated HDMI + HDMI, HDMI + VGA, VGA + HDMI
<b>Resolution</b>	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
<b>Audio</b>	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
<b>Ethernet</b>	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 3 x Intel® I211AT
<b>USB/SATA/COM/LAN</b>	8/4/6/2	13/6/10/4
<b>Power Requirement</b>	+12V/+5V/5Vsb/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V
<b>Power Type</b>	AT/ATX	AT/ATX
<b>Operating Temp.</b>	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
<b>Dimension (L x W)</b>	9.6" x 9.6" (243.84 mm x 243.84 mm)	9.6" x 9.6" (243.84 mm x 243.84 mm)
<b>Weight</b>	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
<b>Processor</b>	Intel® Pentium®/ Celeron® SoC Processor
<b>System Memory</b>	1 x 204-pin DDR3L 1866 SO-DIMM up to 8 GB
<b>Expansion</b>	1 x PCIe x4
<b>USB</b>	6 x USB 2.0 2 x USB 3.0
<b>SATA</b>	2 x SATA III
<b>COM Port</b>	N/A
<b>MIO</b>	1 x SMBus 1 x LPC
<b>Display Chipset</b>	Apollo lake SoC integrated Graphics
<b>Display</b>	LVDS, DDI
<b>Audio</b>	Intel® High Definition Audio
<b>Ethernet</b>	1 x Intel® WGI211AT
<b>Power Requirement</b>	+4.75V ~ +20V
<b>Operating Temperature</b>	0°C ~ 60°C (32°F ~ 140°F)
<b>Dimension (L x W)</b>	3.31" x 2.17" (84mm x 55mm)
<b>Certification</b>	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
<b>Processor</b>	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
<b>System Memory</b>	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)
<b>Expansion</b>	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
<b>USB</b>	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
<b>SATA</b>	4 x SATA III	4 x SATA III	4 x SATA III	4 x SATA III	4 x SATA III	2 x SATA II
<b>COM Port</b>	2 x UART	2 x UART	2 x UART	2 x UART	2 x UART	1 x UART
<b>MIO</b>	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
<b>Display Chipset</b>	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
<b>Display</b>	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI
<b>Audio</b>	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® Valleyview SoC integrated
<b>Ethernet</b>	1 x Intel® I219LM	1 x Intel® I219LM	1 x Intel® I219LM	1 x Intel® I219LM	1 x Intel® I219LM	1 x Intel® I211AT
<b>Power Requirement</b>	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V
<b>Operating Temperature</b>	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	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
<b>Dimension (L x W)</b>	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)
<b>Certification</b>	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
<b>Processor</b>	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
<b>System Memory</b>	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
<b>Storage</b>	8GB eMMC	eMMC 4GB	eMMC 4GB	N/A
<b>External I/O Connector</b>	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
<b>Internal I/O Connector</b>	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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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
<b>Power Requirement</b>	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
<b>Operating Temperature</b>	-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)
<b>Storage Temperature</b>	-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)
<b>Dimension (L x W)</b>	146 mm x 102 mm	146 mm x 102 mm	175 mm x 110 mm	120 mm x 78 mm
<b>Weight</b>	0.15 kg	0.15 kg	0.16 kg	0.1 kg
<b>Certification</b>	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class A
<b>Software Support</b>	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
<b>Processor</b>	Intel® Pentium®/ Celeron® processor	Intel® Atom™/ Celeron® processor	Intel® Atom™ Processor (E3825/ E3845)	NXP i.MX 6 Solo/ Quad
<b>System Memory</b>	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)
<b>Expansion</b>	3 x PCIe1	3 x PCIe1	3 x PCIe1	3 x PCIe1
<b>USB</b>	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
<b>SATA</b>	2 x SATA III	2 x SATA II	2 x SATA II	1 x SATA II (Quad only)
<b>UART</b>	1 x UART	1 x UART	1 x UART	1 x UART
<b>MIO</b>	1 x SMBus, 1 x LPC, 1 x I <sup>2</sup> C, 1 x SPI	1 x LPC, 1 x SMBus, 1 x I <sup>2</sup> C	1 x LPC, 1 x SMBus, 1 x I <sup>2</sup> C	3 x I <sup>2</sup> C
<b>Display Chipset</b>	Apollo lake SoC integrated Graphics	Intel® Valleyview SoC integrated Graphics	Intel® Valleyview SoC integrated Graphics	NXP
<b>Display</b>	(HDMI or DP) + (eDP or LVDS)	DDI (HDMI or DP) + LVDS	DDI (HDMI or DP) + LVDS	1 x HDMI/ LVDS
<b>Audio</b>	Intel® Apollo lake SoC integrated	Intel® Valleyview SoC integrated	Intel® Valleyview SoC integrated	Supports I <sup>2</sup> C interface
<b>Ethernet Chipset</b>	1 x Intel® I210 (N4200/N3350) Industrial 1 x Intel® I211 commercial	1 x Intel® I211 (commercial)	1 x Intel® I210 for Industrial 1 x Intel® I211 for commercial	1 x KSZ9031
<b>Power Requirement</b>	+5V	+5V	+5V	+5V
<b>Others</b>	N/A	N/A	N/A	Support Mipi CSI Camera
<b>Operating Temperature</b>	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)
<b>Dimension (L x W)</b>	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)
<b>Certification</b>	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B
<b>Software Support</b>	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
<b>Processor</b>	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
<b>System Memory</b>	1GB DDR3	1GB DDR3 expandable to 2 GB
<b>Storage</b>	eMMC 8GB	eMMC 4GB
<b>External I/O Connector</b>	1 x USB 2.0 Port (One OTG) 1 x I <sup>2</sup> C 1 x I <sup>2</sup> 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 PCIEx1 1 x MLB150 12 x GPIOs, 1 x SDIO, 1 x SATA eMMC, 2 x SPI, 3 x I <sup>2</sup> C, 1 x SPDIF, 1 x WDT, 2 x CAN, 1 x JTAG
<b>Internal I/O Connector</b>	N/A	N/A
<b>Power Requirement</b>	12~24V	3V to 5.25V - Operates Directly from Single Level Lithium Ion Cells, or Fixed 3.3V or 5V Power Supplies
<b>Operating Temperature</b>	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)
<b>Storage Temperature</b>	-40°C ~ 85°C (-40°F ~ 185°F)	-40°C ~ 85°C (-40°F ~ 185°F)
<b>Dimension (L x W)</b>	82 mm x 50 mm	82 mm x 50 mm
<b>Weight</b>	0.06 kg	0.06 kg
<b>Certification</b>	CE, FCC Class B	CE, FCC Class B
<b>Software Support</b>	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 <sup>2</sup> 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

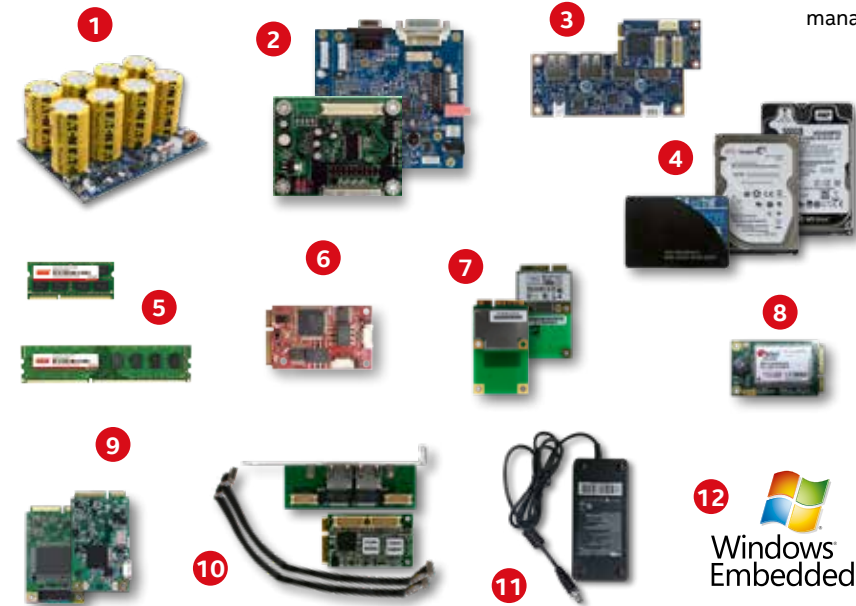
Qseven Carrier Board	
Model Number	REV-Q703 (A/B)
<b>USB</b>	4 x USB 2.0, 2 x USB 3.0 (2 x USB on board, 2 x USB 3.0/ 1 x USB external)
<b>SATA</b>	2 x SATA (On board)
<b>COM Port</b>	1 x RS-232
<b>Video</b>	1 x HDMI, 1 x LVDS, 1 x DP, 1 x eDP (1 x LVDS & 1 x eDP on board)
<b>Other</b>	External I/O Connector 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
<b>DIO</b>	1 x 16 bit GPIO
<b>MIO</b>	1 x SD socket for version A 1 x Micro SD socket for version B
<b>Expansion</b>	1 x Mini PCIe Supports SIM Card
<b>Audio Chipset</b>	ALC892/ WM8962
<b>Audio Interface</b>	Mic-In, Line-In, Line-Out
<b>Power Requirement</b>	DC +12V
<b>Operating Temperature</b>	-40°C ~ 85°C (-40°F ~ 185°F)
<b>Dimension (L x W)</b>	6.69" x 6.69" (170 mm x 170 mm)
<b>Certification</b>	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	<b>Power Board</b>	EPM-1718 60W DC to DC Marine Power Module EPM-1715 Super Cap Power Module
2	<b>Display Board</b>	EPM-1525 VGA/DVI to TTL/LVDS Scalar Module EPM-1530 18/24 bit LVDS Receiver Module
3	<b>IO Board</b>	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	<b>Industrial Storage</b>	SSD: 2.5", mSATA, M.2, CFAST, CF, DOM HDD: 2.5", 3.5"
5	<b>Industrial Module</b>	Type: SO-DIMM, Long-DIMM Capacity: Max. Up to 32GB Temperature: Standard or Industrial temperature
6	<b>CANBus Module</b>	Form Factor: mPCIe Dual Channel CAN 2.0B Wide temperature: -40° to 85°C
7	<b>Wi-Fi Module</b>	Form Factor: mPCIe/ M.2 Bluetooth supported
8	<b>3G/4G/5G Module</b>	Type: 3G/ 4G / 5G Module Interface: mCPIE, M.2
9	<b>Capture Card</b>	Mini SDI/HDV capture card w/H.264 High Profile encoding
10	<b>Mini LAN Port</b>	2-port 10/100/1000 Ethernet board
11	<b>Power Adapter</b>	AC DC Adapter 60W/84W/120W
12	<b>Microsoft Windows Embedded OS</b>	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
<b>Expansion</b>	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)
<b>Storage</b>	1 x Key-B (2242/2260/2280) 2 x SATA III (7-Pin)
<b>USB</b>	4 x USB 3.2 Gen1
<b>SATA</b>	2 x SATA III
<b>COM Port</b>	2 x RS-232
<b>DIO</b>	1 x 8bit GPIO 1 x 16bit GPIO
<b>Other</b>	7 x HDMI 2 x LAN 1 x Mic-In (Audio Jack) 1 x Line-Out (Audio Jack)
<b>Display Resolution</b>	HDMI: Max.resolution 3840 x 2160 @ 30Hz Reflects the CPU and GPU Graphic engines
<b>Multiple Display</b>	7 Display: 7 x HDMI
<b>Ethernet Chipset</b>	1 x Intel® I210IT 1 x LAN Chipset from COM Express®
<b>Ethernet Interface</b>	2 x RJ-45 10/100/1000 Base-Tx GbE compatible
<b>Power Requirement</b>	+12V
<b>ACPI</b>	Single Power ATX Support S0, S3, S4, S5 ACPI 5.0 Compliant
<b>Power Type</b>	AT/ATX
<b>Operating Temperature</b>	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
<b>Storage Temperature</b>	-40°C ~ 75°C (-40°F ~ 167°F)
<b>Operating Humidity</b>	40°C @ 95% Relative Humidity, Non-condensing
<b>Dimension (L x W)</b>	8.6" x 8.26" (220mm x 210mm)
<b>Weight</b>	0.041lbs(0.03kg)
<b>Vibration Protection</b>	With SSD: 5Grms, IEC 60068-2-64, Random, 10 ~ 500Hz, 30min/Axis, 3 Axis
<b>Certification Information</b>	CE, FCC Class A
<b>OS Information</b>	According to COMe Module Spec.

### GPU Solution - System

Model Number	EGS-MX1
<b>Board</b>	EEV-MX01+ESM-CFH MXM (Optional)
<b>Processor</b>	i7-9850HE, i5-8400H, i3-9100H
<b>System Memory</b>	3 x 260-pin DDR4 2400/2133 SO-DIMM up to 96 GB
<b>Expansion</b>	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
<b>Storage</b>	1 x 2.5" internal Drive Bay 1 x M.2 Key-B 2242/2260/2280
<b>USB</b>	4 x USB 3.1 Gen.2(10Gbp/s)
<b>COM Port</b>	2 x RS-232
<b>Other</b>	2 x SIM Card Slot (Internal) 4 x Antenna with dust cover
<b>DIO</b>	1 x 8/16-Bit GPIO
<b>Display Chipset</b>	Intel® Coffee Lake Processor Integrated Graphics (UHD 630) MXM GPU Graphics
<b>Display Resolution</b>	3 x HDMI 1.4: 4096 x 2160 @30Hz (from COMe) 4 x HDMI 2.0b: 4096 x 2160 @ 60Hz (from MXM)
<b>Audio Chipset</b>	Realtek ALC892 HD codec
<b>Audio Interface</b>	1 x Mic-In, 1 x Line-Out
<b>Ethernet Chipset</b>	1 x Intel® I210IT 1 x Intel® I219LM
<b>Ethernet Interface</b>	2 x RJ45
<b>Power Connector</b>	10-pin connector
<b>Power Requirement</b>	+12Vdc (±5%)
<b>ACPI</b>	Single power ATX Support S0,S3, S4, S5 ACPI 5.0 Compliant
<b>Power Mode</b>	ATX/AT mode, default set as ATX
<b>Adapter</b>	Optional 240W, 12V/20A, AC/DC Adapter
<b>Construction</b>	Metal
<b>Dimension (L x W x H)</b>	240mm x 240mm x 85mm
<b>Operating Temperature</b>	(w/SSD), ambient w/ air flow 0°C ~ 50°C (32°F ~ 122°F)
<b>Certification Information</b>	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
<b>Board</b>	EBM-SKLUS + AUX-M07
<b>Processor</b>	i7-6600U, i5-6300U, i3-6100U, Celeron 3955U
<b>System Memory</b>	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB
<b>Expansion</b>	1 x M.2 Key B, Size 2242/ 3042 (SATA/ PCIe/ USB3.0) 1 x Mini PCIe
<b>Storage</b>	1 x 2.5" Drive Bay, 1 x M.2 (SATA)
<b>USB</b>	4 x USB 3.0, 2 x USB 2.0
<b>COM Port</b>	2 x RS-232/422/485 (Jumper) 4 x RS-232/422/485 (BIOS, 2.5KV isolation)
<b>Other</b>	2 x SIM Card Slot, 1 x SMBus, 2 x PS2/ KB & MS 2 x Antenna mounting w/ cover
<b>DIO</b>	1 x 12-bit GPIO
<b>Display Chipset</b>	Intel® HD Graphics 520/ 510
<b>Display Resolution</b>	DP: Max. resolution 4096x2304 @ 60Hz
<b>Audio Chipset</b>	Realtek Audio code
<b>Audio Interface</b>	Mic-In, Line-In and Line-Out
<b>Ethernet Chipset</b>	2 x Intel® I211AT
<b>Ethernet Interface</b>	2 x RJ45
<b>Power Requirement</b>	Typical 12/24Vdc (+9V ~ +36V) TVS component for surge protection
<b>ACPI</b>	Single power ATX Supports S0, S3, S4, S5; ACPI 5.0 Compliant
<b>Power Mode</b>	AT/ATX (ATX is the default setting)
<b>Dimension (L x W x H)</b>	9.45" x 5.96" x 2.95" (240 x 151.5 x 75 mm)
<b>Operating Temperature</b>	(w/SSD), ambient w/ air flow -20°C ~ 60°C (-4°F ~ 140°F)
<b>Certification Information</b>	CE, FCC Class A, IEC 60945

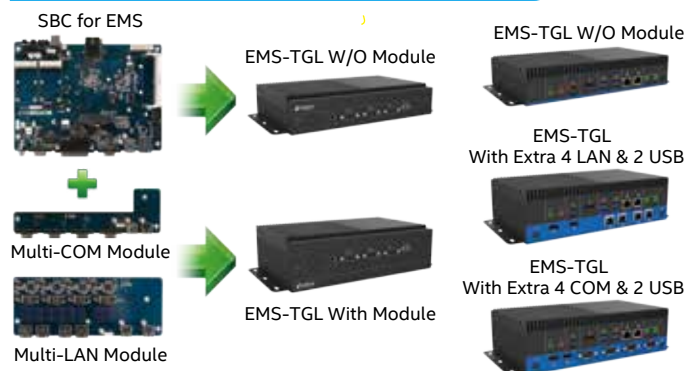
## Transportation System (Vehicle)

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
<b>Board</b>	EBM-TGLS	EBM-SKLU5	EBM-BYTS
<b>Processor</b>	i7-1185GRE/ i5-1145GRE/ i3-1115GRE i7-1185G7E/ i5-1145G7E/ i3-1115G4E	i7-6600U/ i5-6300U/ i3-6100U/3955U	J1900/ E3845
<b>System Memory</b>	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
<b>Expansion</b>	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
<b>Storage</b>	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
<b>USB</b>	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
<b>COM Port</b>	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)
<b>Other</b>	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
<b>DIO</b>	1 x 8bit GPIO	1 x 12bit GPIO	1 x 12bit GPIO
<b>Display Chipset</b>	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
<b>Display Resolution</b>	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
<b>Audio Chipset</b>	Realtek Audio code	Realtek Audio code	Realtek Audio code
<b>Audio Interface</b>	Mic-In, Line-In	Mic-In, Line-In, Line-Out	Mic-In, Line-In, Line-Out
<b>Ethernet Chipset</b>	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
<b>Ethernet Interface</b>	2 x RJ45	2 x RJ45	1 x RJ45
<b>Power Connector</b>	3-Pin Terminal Block	3-Pin Terminal Block	Lockable DC Jack
<b>Power Requirement</b>	Typical +12 ~ +24Vdc (+9V ~ +32Vdv)	Typical +12 ~ +24Vdc (+9V ~ +32Vdv)	+12V ~ +26V TVS component for surge protection Reverse current/ voltage protection
<b>ACPI</b>	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5 ACPI 5.0 Compliant
<b>Power Mode</b>	AT/ ATX (ATX is default setting)	AT/ ATX (ATX is default setting)	AT/ ATX (ATX is default setting)
<b>Adapter</b>	Optional AC-DC Adapter (60W)	Optional AC-DC Adapter (60W)	Optional AC-DC Adapter (60W)
<b>Construction</b>	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal + Plastic
<b>Dimension (L x W x H)</b>	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
<b>Operating Temperature</b>	(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)
<b>Certification Information</b>	CE, FCC Class B	CE, FCC Class A	CE, FCC Class B

## Expandable Fanless System

Model Number	SLP-SKL	SLP-SKLB	SLP-SKG
<b>Processor</b>	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
<b>System Chipset</b>	Intel® Q170 Chipset		N/A
<b>System Memory</b>	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)
<b>Expansion</b>	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
<b>Storage</b>	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
<b>USB</b>	6 x USB 3.0		4 x USB 3.0
<b>COM Port</b>	2 x RS-232 2 x RS-232/422/485		4 x RS232
<b>Other</b>	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
<b>Display</b>	DP + DVI-I		HDMI + VGA
<b>Audio</b>	Mic-In, Line-In and Line-Out		Mic-In and Line-Out
<b>Ethernet</b>	1 x Intel® I219LM, 1 x Intel® I210AT		1 x Intel® I219LM 1 x Intel® I211AT
<b>Power Connector</b>	Phoenix Connector		Phoenix Connector Mini Din connector
<b>Power Requirement</b>	Built-in 9-36 VDC wide-range DC input		+12-24 VDC input
<b>Power Mode</b>	ATX		ATX / AT
<b>Adapter</b>	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 180W Adapter (24V @ 7.5A)		Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 180W Adapter (24V @ 7.5A)
<b>Operating Temperature</b>	(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
<b>Storage Temperature</b>	40°C ~ 75°C (-40°F ~ 167°F)		40°C ~ 75°C (-40°F ~ 167°F)
<b>Construction</b>	Aluminum + Metal		Aluminum + Metal
<b>Mounting Kit</b>	Wall Mount VESA (Optional)		N/A
<b>Dimension (L x W x H)</b>	200 x 225 x 218 mm		221.8 x 135 x 232.85 mm
<b>Weight</b>	4.5 kg		3.6 kg





## VM System - Automation



### VM System - Automation

Model Number	HPC-BYT	ERS-BYTE-10COM	EMS-SKLU-GPIO
<b>Board</b>	ESM-BYT2 + EAP-CE04 + HPC DB-A	EBM-BYTS + AUX-M03	EBM-SKLUS + AUX-M08
<b>Processor</b>	E3845	J1900	Celeron 3955U
<b>System Memory</b>	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
<b>Expansion</b>	2 x Mini PCIe	2 x Mini PCIe	1 x Mini PCIe, 1 x M.2 Key B, Size 2242/ 3042
<b>Storage</b>	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)
<b>USB</b>	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
<b>COM Port</b>	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)
<b>Other</b>	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
<b>DIO</b>	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
<b>Display Chipset</b>	Intel® HD Graphics for Intel® Atom® Processor Z3700 Series	Intel® HD Graphics for Intel® Atom® Processor Z3700 Series	Intel® HD Graphics 510
<b>Display Resolution</b>	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
<b>Audio Interface</b>	Line-In and Line-Out	Mic-In, Line-In and Line-Out	Mic-In, Line-In, Line-Out
<b>Ethernet Chipset</b>	2 x Intel® I211AT	1 x Intel® I211AT	1 x Intel® I211AT 1 x Intel® I219LM 4 x Intel® I210AT
<b>Ethernet Interface</b>	2 x RJ45	1 x RJ45	6 x RJ45, 4-Port supports 802.3af PoE
<b>Power Requirement</b>	+12V ~ +48V	+12V ~ +26V TVS component for surge protection Reverse current/voltage protection	Typical +12/+24Vdc (+9V ~ +32Vdc)
<b>Dimension (L x W x H)</b>	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
<b>Operating Temperature</b>	(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)
<b>Certification Information</b>	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
<b>Processor</b>	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
<b>System Chipset</b>	N/A	N/A	N/A
<b>System Memory</b>	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)
<b>Expansion</b>	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
<b>Storage</b>	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
<b>USB</b>	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
<b>COM Port</b>	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
<b>Other</b>	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)
<b>Display</b>	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
<b>Display Resolution</b>	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
<b>Audio</b>	Realtek Audio code Mic-In and Line-Out	Realtek Audio code Mic-In and Line-Out	Realtek Audio code Mic-In and Line-Out
<b>Ethernet</b>	2 x Intel® I211AT	2 x Intel® I211AT	1 x Intel® i211AT 1 x Intel® i219LM
<b>Power Connector</b>	DC Jack (lockable)	DC Jack (lockable)	DC Jack (lockable)
<b>Power Requirement</b>	+12V	+12V	+12V~24V
<b>Power Mode</b>	ATX	ATX	ATX
<b>Adapter/Power Supply</b>	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)
<b>Operating Temperature</b>	(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)	(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
<b>Storage Temperature</b>	-40°C ~ 75°C (-40°F ~ 167°F)	-40°C ~ 75°C (-40°F ~ 167°F)	-40°C ~ 75°C (-40°F ~ 167°F)
<b>Construction</b>	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal
<b>Mounting Kit</b>	VESA/ Din rail/ Wall Mount (Optional)	VESA/ Din rail/ Wall Mount (Optional)	VESA/ Din rail/ Wall Mount (Optional)
<b>Dimension (L x W x H)</b>	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
<b>Board</b>	ECM-CFS	ECM-CFS	ECM-KBLH	EBM-BYTS	ECM-BYT + AUX-032
<b>Processor</b>	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
<b>System Chipset</b>	Intel® Q370 Express Chipset Intel® H310 Express Chipset	Intel® Q370 Express Chipset Intel® H310 Express Chipset	Intel® QM175 Express Chipset	N/A	N/A
<b>System Memory</b>	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
<b>Expansion</b>	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
<b>Storage</b>	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
<b>USB</b>	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
<b>COM Port</b>	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)
<b>Display Chipset</b>	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
<b>Display Resolution</b>	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
<b>Audio Chipset</b>	Realtek Audio code	Realtek Audio code	Realtek Audio code	Realtek Audio code	Realtek Audio code
<b>Audio Interface</b>	Mic-In and Line-Out	Mic-In and Line-Out	Mic-In and Line-Out	Mic-In, Line-In and Line-Out	Mic-In, Line-In and Line-Out
<b>Ethernet Chipset</b>	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
<b>Ethernet Interface</b>	2 x RJ45	2 x RJ45	2 x RJ45	1 x RJ-45	2 x RJ45
<b>Power Connector</b>	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
<b>Power Requirement</b>	+12V	+12V	+12V +9V ~ +36V (optional w/ EPM-1712)	+12V ~ +26V	+12V ~ +26V
<b>ACPI</b>	Single Power ATX Support S0, S1, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S1, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, 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
<b>Power Mode</b>	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)
<b>Dimension (L x W x H)</b>	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
<b>Operating Temperature</b>	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)
<b>Certification</b>	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
<b>Processor</b>	Intel® Celeron® J3455E Processor	Intel® Celeron® N3350 Processor	Intel® Celeron® J3455/N3350 Processor	Intel® Celeron® J3455/N3350 Processor
<b>System Memory</b>	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
<b>Expansion</b>	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)
<b>Storage</b>	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)
<b>USB</b>	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)
<b>COM Port</b>	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)
<b>Other</b>	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
<b>Display</b>	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
<b>Audio</b>	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)
<b>Ethernet</b>	2 x Intel I211AT	2 x Intel I211AT	2 x Realtek RTL8111E Gigabit	2 x Realtek RTL8111E Gigabit
<b>Power Connector</b>	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
<b>Power Requirement</b>	+12V	+12V	+12V	+12V
<b>Power Mode</b>	ATX	ATX	ATX	ATX
<b>Adapter</b>	Input: 100 ~ 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)
<b>Operating Temperature</b>	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
<b>Storage Temperature</b>	-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)
<b>Construction</b>	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal
<b>Mounting Kit</b>	Wall Mount (Optional)	VESA/ Din rail/ Wall Mount (Optional)	VESA/ Din rail	VESA/ Din rail
<b>Dimension (L x W x H)</b>	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)
<b>Weight</b>	1.2 kg	1.5 kg	0.85kg	0.72kg
<b>Certification</b>	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
<b>Board</b>	ECM-WHL	ECM-SKLU	ECM-APL2	ECM-BYT2	ECM-BYT + AUX-032
<b>Processor</b>	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
<b>System Memory</b>	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
<b>Expansion</b>	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
<b>Storage</b>	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 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
<b>USB</b>	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
<b>COM Port</b>	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
<b>Other</b>	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
<b>Display Chipset</b>	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
<b>Resolution</b>	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
<b>Audio Chipset</b>	Realtek Audio code	Realtek Audio code	Realtek Audio code	Realtek Audio code	Realtek Audio code
<b>Audio Interface</b>	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
<b>Ethernet Chipset</b>	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
<b>Ethernet Interface</b>	2 x RJ45	2 x RJ45	2 x RJ45	2 x RJ45	2 x RJ45
<b>Power Connector</b>	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
<b>Power Requirement</b>	+12V	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V
<b>ACPI</b>	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant
<b>Power Mode</b>	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)
<b>Adapter</b>	Input: 100 ~ 240Vdc/50 ~ 60Hz Output: 120W Adapter (12V @ 10A Adapter) AC-DC Adapter	Input: 100 ~ 240Vdc/50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter) AC-DC Adapter	Input: 100 ~ 240Vdc/50 ~ 60Hz Output: 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
<b>Construction</b>	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal
<b>Dimension (L x W x H)</b>	6.97" x 4.84" x 2.17" (177mm x 123mm x 55mm)	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)
<b>Operating Temperature</b>	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)
<b>Certification</b>	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
<b>Processor</b>	NXP i.MX6 Cortex-A9 Dual Lite/ Quad 1GHz CPU	NXP i.MX6 Cortex-A9 Quad 1GHz CPU	NXP i.MX8M Cortex-A53 Quad Core 1.3GHz; Cortex-M4 core processor
<b>System Memory</b>	Onboard DDR3 1GB	Onboard DDR3 1GB	Onboard DDR4 2GB
<b>Storage</b>	1 x On board 4GB eMMC	1 x On board 8GB eMMC	1 x On board 8GB eMMC
<b>External I/O Connector</b>	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)
<b>Power Requirement</b>	12 ~ 26V DC input, 2.5mm DC Jack, typical 19V input With brownout detection or Powered LAN (optional)	12 ~ 24V DC input, 2.5mm DC Jack, typical 19V input With brownout detection	12 ~ 24V DC input, Terminal block
<b>Operating Temperature</b>	-20°C ~ 70°C (-4°F ~ 158°F)	-20°C ~ 50°C (-4°F ~ 122°F)	-40°C ~ 85°C (-40°F ~ 185°F)
<b>Storage Temperature</b>	-40°C ~ 70°C (-40°F ~ 158°F)	-20°C ~ 70°C (-4°F ~ 158°F)	-40°C ~ 85°C (-40°F ~ 185°F)
<b>Dimension (L x W x H)</b>	153 mm x 107.8 mm x 30 mm	186 mm x 121.35 mm x 37 mm	177 mm x 112 mm x 53.5 mm
<b>Weight</b>	1.5 kg	1.0 kg	2.0 kg
<b>Certification</b>	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B
<b>Software Support</b>	Android 4.4 or 6.0 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
<b>Processor</b>	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)
<b>System Chipset</b>	Intel® C246 Chipset	Intel® C621 Chipset	Intel® C621 Chipset
<b>System Memory</b>	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
<b>Expansion</b>	1 x PCI-E Gen3 x16 slot 1 x PCI-E Gen2 x 8 slot 1 x PCI-E Gen3 x 4 slot 1 x PCI-E Gen3 x 1 slot 1 x PCI 3.0 slot	Slot 1, PCIe 3.0 x16 from CPU1 Slot 2, PCI 3.0 Slot 3, PCIe 3.0 x16 from CPU1 Slot 4, PCIe 3.0 x16 from CPU2 Slot 5, PCIe 3.0 x16 from CPU2 Slot 6, PCIe 3.0 x8 from CPU1 Slot 7, PCIe 3.0 x8 from CPU1 (Slot 7 is the slot closest to CPU)	Slot 1, PCI 3.0 slot Slot 2, PCIe 3.0 x8 Slot 3, PCIe 3.0 x16 Slot 4, PCIe 3.0 x8 Slot 5, PCIe 3.0 x16 Slot 6, PCIe 3.0 x8 Slot 7, PCIe 3.0 x16 (Slot 7 is the slot closest to CPU, x16 will switch to x8 automatically when Slot 6 is used)
<b>Display</b>	Intel® 8/9th Gen. CPU Integrated 3 x DP++ AST 2500 BMC Controller	AST 2500 BMC Controller	AST 2500 BMC Controller
<b>Resolution</b>	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
<b>Audio</b>	Realtek Audio code Mic-in, Line-in, Line-out	NA	NA
<b>Ethernet</b>	7 x Intel® I210AT Giga-bit Ethernet	4 x Intel® I210AT Giga-bit Ethernet	4 x Intel® I210AT Giga-bit Ethernet
<b>USB/SATA/COM/LAN</b>	8/4/2/7	8/10/2/4	8/9/2/4
<b>Power Requirement</b>	1 x Std. 24 pin ATX Connector 1 x 8 Pin SSI 12V Connector	1 x Std. 24 Pin ATX Connector 2 x 8 Pin SSI 12V Connectors	1 x Std. 24 Pin ATX Connector 2 x 8 Pin SSI 12V Connectors
<b>Power Type</b>	ATX	ATX	ATX
<b>IPMI</b>	IPMI 2.0	IPMI 2.0	IPMI 2.0
<b>Operating Temperature</b>	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
<b>Dimension (L x W)</b>	12" x 9.6" (304.8 mm x 243.84 mm) PCB thickness is 2.0mm	12" x 13" (304.8mm x 330.2mm) PCB thickness is 2.0mm	12" x 9.6" (304.8mm x 243.84mm) PCB thickness is 2.0mm
<b>Weight</b>	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
<b>Processor (CPU Type)</b>	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)
<b>Chipset</b>	Intel® C246 Chipset	Intel® C621 Chipset	Intel® C621 Chipset
<b>Memory</b>	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
<b>Storage</b>	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)
<b>IPMI</b>	IPMI 2.0	IPMI 2.0	IPMI 2.0
<b>Expansion Slots</b>	1 x PCI-E Gen3 x16 slot 1 x PCI-E Gen2 x 8 slot 1 x PCI-E Gen3 x 4 slot 1 x PCI-E Gen3 x 1 slot 1 x PCI 3.0 slot	Slot 1, PCIe 3.0 x16 from CPU1 Slot 2, PCI 3.0 Slot 3, PCIe 3.0 x16 from CPU1 Slot 4, PCIe 3.0 x16 from CPU2 Slot 5, PCIe 3.0 x16 from CPU2 Slot 6, PCIe 3.0 x8 from CPU1 Slot 7, PCIe 3.0 x8 from CPU1 (Slot 7 is the slot closest to CPU)	Slot 1, PCI 3.0 slot Slot 2, PCIe 3.0 x8 Slot 3, PCIe 3.0 x16 Slot 4, PCIe 3.0 x8 Slot 5, PCIe 3.0 x16 Slot 6, PCIe 3.0 x8 Slot 7, PCIe 3.0 x16 (Slot 7 is the slot closest to CPU, x16 will switch to x8 automatically when Slot 6 is used)
<b>LAN</b>	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
<b>USB</b>	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
<b>Display</b>	Intel® 8/9th Gen. CPU Integrated 3 x DP++ AST 2500 BMC Controller	AST 2500 BMC Controller	AST 2500 BMC Controller
<b>Display Resolution</b>	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
<b>Audio</b>	NA	NA	NA
<b>Cooling Fan</b>	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
<b>Power Supply</b>	500W	1300W	700W
<b>Power Mode</b>	ATX	ATX	ATX
<b>Operating Temperature</b>	5°C ~ 45°C (41°F ~ 113°F)	5°C ~ 45°C (41°F ~ 113°F)	5°C ~ 45°C (41°F ~ 113°F)
<b>Dimension (L x W x H)</b>	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")
<b>Form Factor</b>	19" 4U Rackmount	19" 4U Rackmount	19" 4U Rackmount
<b>OS</b>	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
<b>Processor</b>	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)
<b>System Chipset</b>	Intel® C246 Chipset	Intel® H110 Chipset	Intel® Q170 Chipset	Intel® Q170 Chipset	Intel® H110 Chipset
<b>System Memory</b>	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
<b>Expansion</b>	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 x 16, 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 x 16, 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
<b>Storage</b>	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
<b>USB</b>	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
<b>COM Port</b>	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
<b>Other</b>	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
<b>Display</b>	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
<b>Display Resolution</b>	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
<b>Audio</b>	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
<b>Ethernet</b>	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
<b>Power Connector</b>	AC Jack (IEC 320 C14)	AC Jack (IEC 320 C14)	AC Jack (IEC 320 C14)	Power Din Jack	Power Din Jack
<b>Power Requirement</b>	100 ~ 240 VAC	100 ~ 240 VAC	100 ~ 240 VAC	DC in 18~28V via power converter	DC in 18~28V via power converter
<b>Power Mode</b>	ATX	ATX	ATX	ATX	ATX
<b>Adapter/Power Supply</b>	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)
<b>Operating Temperature</b>	(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)
<b>Storage Temperature</b>	-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)
<b>Construction</b>	Aluminum + Metal	Metal	Metal	Aluminum + Metal	Aluminum + Metal
<b>Mounting Kit</b>	N/A	N/A	N/A	VESA/ Din rail/ Wall Mount (Optional)	VESA/ Din rail/ Wall Mount (Optional)
<b>Dimension (L x W x H)</b>	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
<b>Processor</b>	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)
<b>System Memory</b>	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
<b>Storage</b>	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
<b>Expansion</b>	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
<b>Display</b>	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
<b>Audio</b>	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
<b>Ethernet</b>	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
<b>USB</b>	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
<b>COM Port</b>	1 x RS-232	1 x RS-232	1 x RS-232	1 x RS-232	1 x RS-232	1 x RS-232
<b>Others</b>	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
<b>Power Type</b>	ATX	ATX	ATX	ATX	ATX	ATX
<b>Operating Temperature</b>	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)
<b>Power Supply</b>	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
<b>Dimensions (L x W x H) w/o Front Panel</b>	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





### 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
<b>LCD Size</b>	15.6"	18.5"
<b>Display Type</b>	HD	HD
<b>Resolution</b>	1366 x 768	1366 x 768
<b>Pixel Pitch</b>	0.3 (H) x 0.3 (V) mm	0.3 (H) x 0.3 (V) mm
<b>Luminance</b>	220 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>
<b>Contrast Ratio</b>	400 ~ 500	700 ~ 1000
<b>Viewing Angle</b>	Horizontal 40 ~45; Vertical 10 ~15 (upper) 30 ~ 35 (lower)	Horizontal 150 ~170; Vertical 140 ~160
<b>Response Time</b>	TRT 8 - 16ms	TR 2.5 ~2.5ms; TF 3.5-5.5ms
<b>Backlight</b>	LED	LED
<b>Touch Type</b>	Projective Capacitive	Projective Capacitive
<b>Touch Light Transmission</b>	88% +/- 3%	88% +/- 3%
<b>Touch Controller</b>	Control Board EETI	Control Board EETI
<b>Processor</b>	Intel® Atom™ Processor Z3735F	
<b>System Memory</b>	2GB DDR3L RAM	
<b>Storage</b>	32GB eMMC	
<b>USB</b>	3 x USB 2.0, 1 x Micro USB Client (Android)	
<b>Other</b>	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	
<b>Audio</b>	Realtek ALC5645	
<b>Audio Interface</b>	Mic-in and Line-out, 2 x 3W Speaker	
<b>Ethernet</b>	1 x Microchip LAN9512	
<b>Power Connector</b>	DC Jack, 12V ~ 24V Input	
<b>Power Type</b>	ATX	
<b>Adapter</b>	Input:100~ 240 Vac/ 50 ~ 60Hz; Output 90W Adapter (19V/4.73A)	
<b>Construction (Front, Rear)</b>	White Plastic	
<b>Finishing</b>	Anti-microbial	
<b>Dimension</b>	392.45 x 255.45 x 63.42 mm	463.95 x 289.95 x 68.83 mm
<b>Weight</b>	2.82 kg	3.75 kg
<b>Operating Temperature</b>	0°C ~ 40°C (32°F ~ 104°F)	
<b>Storage Temperature</b>	-10°C ~ 60°C (14°F ~ 140°F)	
<b>Certification</b>	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
<b>OS Information</b>	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

Stereo Speaker

LED reading light bar

LED reading light bar

Optional 2.0M CMOS  
web cam

Stereo Speaker

### Reserve Enhance Space

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

### Front bezel touch keypad

Optional  
Smart Card Reader

- 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
<b>LCD Size</b>	21.5"	21.5"	23.8"	23.8"
<b>Display Type</b>	Full HD	FHD	Full HD	FHD
<b>Resolution</b>	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
<b>Pixel Pitch</b>	0.248 x 0.248	0.248 x 0.248	0.274 x 0.274	0.274 x 0.274
<b>Luminance</b>	250 cd/m <sup>2</sup>	250 cd/m <sup>2</sup>	250 cd/m <sup>2</sup>	250 cd/m <sup>2</sup>
<b>Contrast Ratio</b>	3000	3000	3000	3000
<b>Viewing Angle</b>	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)
<b>Response Time</b>	18 ms	18 ms	N/A	16 ms
<b>Backlight</b>	LED	LED	LED	LED
<b>Touch Type</b>	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
<b>Touch Light Transmission</b>	89%	89%	89%	86%
<b>Touch Controller</b>	USB interface, EETI	USB interface, EETI	USB touch (EETI)	USB interface, EETI
<b>SBC</b>	ARC-SKLU	ARC-SKLU	ARC-SKLU	HID-2334 M/B + Charger board
<b>Processor</b>	6th Gen Intel® Core™ i7/5/3/Celeron processor		7th Generation Intel® Kaby Lake Core™ i7/i5/i3/ Celeron® Processor	
<b>I/O Chipset</b>	EC ITE IT8528E			EC ITE IT8518E
<b>System Memory</b>	1 x 260pin SODIMM socket up to 16GB DDR4 2133 SDRAM			2 x 260pin SODIMM socket up to 32GB DDR4 2400 SDRAM
<b>Expansion</b>	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
<b>Storage</b>	1 x 2.5" SATA3 SSD			1 x 2.5" SATA3 SSD
<b>USB</b>	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
<b>COM Port</b>	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
<b>Other</b>	Dual LED Reading Light Bar, I/O Cover		HDMI Video out on IET module, DICOM pre-set	
<b>Display Chipset</b>	Intel® HD Graphics 520		Intel® HD Graphics 620	
<b>Audio</b>	Realtek ALC892		Realtek ALC892	
<b>Audio Interface</b>	2 x 0.5W		Line Out, Mic in, 2 x 0.5W	
<b>Ethernet</b>	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
<b>Adapter</b>	AC/ DC medical power adapter Output: 90W Adapter (19V/4.74A Adapter)		AC/ DC medical power adapter +24Vdc, 3.75A max. (90W) Output Voltage	
<b>Construction (Front, Rear)</b>	Plastic, Plastic		Plastic, Plastic	
<b>Dimension</b>	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
<b>Weight</b>	6.2 kg	7.5 kg	8.5 kg	6.9 kg (without batteries)
<b>Operating Temperature</b>	0°C ~ 40°C (32°F ~ 104°F)		0 ~ 35° C (32 ~ 95° F)	
<b>Storage Temperature</b>	-20°C ~ 60°C (-4°F ~ 140°F)		-20°C ~ 60°C (-4°F ~ 140°F)	
<b>Certification</b>	CE, FCC Class B, UL60601-1 4th edition		DIN 6868157/ CE, FCC Class B, UL60601-1 4th edition	
<b>OS Information</b>	Win 7/10/ Linux		Win 7/10/ 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 <sup>2</sup>	250 cd/m <sup>2</sup>
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 <sup>2</sup>	600 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>	350 cd/m <sup>2</sup>	250 cd/m <sup>2</sup>
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)					

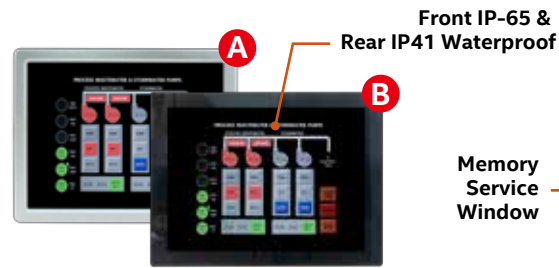


# Rugged Human Machine Interface



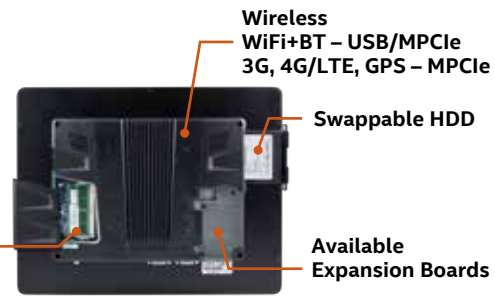
**A** 5-Wire Resistive Touch

**B** Projective Capacitive Multi-Touch (Full Flat design)



Front IP-65 & Rear IP41 Waterproof

Memory Service Window



Wireless WiFi+BT – USB/MPCle 3G, 4G/LTE, GPS – MPCle

Swappable HDD

Available Expansion Boards

## Available Expansion Boards



**Standard**  
• Standard w/o Expansion

**DB-A**  
• Extra 4 x USB 3.0 Ports

**DB-B**  
• 1 x HDMI + 5.1CH Audio (Line-in, Line-out, Mic-in)

**DB-C**  
• 1 x HDMI + 1x MPCle w SIM (Push-Push)

**DB-D**



2 Isolation RS-232

**DB-G**



3 x RS-232

**DB-E**



12-bit GPIO + 2-bit CAN Bus

**DB-H**



2 x RS-232 + USB 2.0

**DB-F**



CAN Bus for OBDII

**DB-K**



2 x RS-232 + LAN

## 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 <sup>2</sup>	300 cd/m <sup>2</sup>	350 cd/m <sup>2</sup>	600 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>
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 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 <sup>2</sup>	600 cd/m <sup>2</sup>	400 cd/m <sup>2</sup>	350 cd/m <sup>2</sup>
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
<b>LCD Size</b>	10.1", 16:10	15.6", 16:9	21.5"	15.6", 16:9	21.5"
<b>Display Type</b>	WXGA	WXGA	Full HD	WXGA	Full HD
<b>Resolution</b>	1280 x 800	1366 x 768	1920 x 1080	1366 x 768	1920 x 1080
<b>Pixel Pitch</b>	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
<b>Luminance</b>	350 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>	250 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>	250 cd/m <sup>2</sup>
<b>Contrast Ratio</b>	800	500	3000	500	3000
<b>Viewing Angle</b>	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)
<b>Response Time</b>	25 ms	8 ms	18 ms	8 ms	18ms
<b>Backlight</b>	LED	LED	LED	LED	LED
<b>Touch Type</b>	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
<b>Touch Light Transmission</b>	88%	88%	89%	88%	89%
<b>Touch Controller</b>	USB touch (EETI)	USB touch (EETI)	USB interface, EETI	USB touch (EETI)	USB interface, EETI
<b>SBC</b>	ARC-APL			ARC-SKLU	ARC-KBLU
<b>Processor</b>	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
<b>I/O Chipset</b>	EC ITE IT8528E			EC ITE IT8528E	
<b>System Memory</b>	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB			1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	
<b>Expansion</b>	1 x Mini PCIe Supports mSATA, 1 x Optional 80-pin Expansion			1 x Mini PCIe Supports mSATA, 1 x Optional 80-pin Expansion	
<b>Storage</b>	1 x 2.5" Drive Bay (7mm HDD Restricted)			1 x 2.5" Drive Bay (7mm HDD Restricted)	
<b>USB</b>	4 x USB 3.0			4 x USB 3.0	
<b>COM Port</b>	1 x RS-232/422/485, 1 x RS-232			1 x RS-232/422/485, 1 x RS-232	
<b>Other</b>	1 x WiFi (Option), 3 x Knockouts for Antenna Mounting			1 x WiFi (Option), 3 x Knockouts for Antenna Mounting	
<b>Display Chipset</b>	Intel® HD Graphics 500			Intel® HD Graphics 520	
<b>Display Resolution</b>	HDMI: Max. resolution 3840 x 2160 @ 30Hz (Optional by IET module)			HDMI: Max. resolution 4096 x 2160 @ 24Hz (Optional by IET module)	
<b>Audio</b>	Realtek ALC892			Realtek ALC892	
<b>Audio Interface</b>	2 x 2W Speaker Out			2 x 2W Speaker Out	
<b>Ethernet</b>	2 x Intel® I211AT			1 x Intel® I210AT 1 x Intel® I219LM	
<b>Power Connector</b>	Lockable DC Jack, +9V ~ +36V			Lockable DC Jack, +12V ~ +26V	
<b>Power Type</b>	AT/ATX (ATX is default setting)			AT/ATX (ATX is default setting)	
<b>Adapter</b>	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)			Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)	
<b>Construction (Front, Rear)</b>	Metal with cover lens, Black Diet Casting			Metal with cover lens, Black Diet Casting	
<b>Operating Temperature</b>	-10°C ~ 50°C (14°F ~ 122°F)			-10°C ~ 50°C (14°F ~ 122°F)	
<b>Storage Temperature</b>	-20°C ~ 60°C (-4°F ~ 140°F)			-20°C ~ 60°C (-4°F ~ 140°F)	
<b>Certification</b>	CE, FCC Class B			CE, FCC Class B	
<b>OS Information</b>	Win 10, Linux			Win7, Win10, Linux	Win10, Linux
<b>Dimension</b>	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
<b>Weight</b>	2 kg	4 kg	7.3 kg	4 kg	7.3 kg

Rugged Human Machine Interface - FPC Series

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

RISC Panel PC

Model Number	BFC-07R1
<b>Resolution</b>	1024 x 800
<b>Pixel Pitch</b>	0.117 (H) x 0.117 (V)
<b>Luminance</b>	400 cd/m <sup>2</sup>
<b>Touch Type</b>	Projective Capacitive
<b>Touch Light Transmission</b>	85 %
<b>Touch Controller</b>	USB touch (SIS)
<b>Processor</b>	NXP i.MX6 Quad
<b>System Memory</b>	1 x Onboard DDR3 1GB
<b>Storage</b>	1 x On board 4GB eMMC
<b>External I/O Connector</b>	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
<b>Power Requirement</b>	12 ~ 26V DC input, 2.5mm DC Jack, typical 19V input With brownout detection or Powered LAN (optional)
<b>Operating Temperature</b>	-20°C ~ 55°C (-4°F ~ 131°F)
<b>Storage Temperature</b>	-30°C ~ 70°C (-22°F ~ 158°F)
<b>Dimension (L x W x H)</b>	184.3 x 124.3 x 30.5 mm
<b>Weight</b>	1.5 kg
<b>Certification</b>	CE, FCC Class B
<b>Software Support</b>	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 <sup>2</sup>	350 cd/m <sup>2</sup>
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 <sup>2</sup>	220 cd/m <sup>2</sup>
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 <sup>2</sup> 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
<b>LCD Size</b>	17.3"	18.5"	21.5"	23.8"
<b>Display Type</b>	Full HD	WXGA	Full HD	Full HD
<b>Resolution</b>	1920 x 1080	1366 x 768	1920 x 1080	1920 x 1080
<b>Pixel Pitch</b>	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)
<b>Luminance</b>	300 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>	250 cd/m <sup>2</sup>	250 cd/m <sup>2</sup>
<b>Contrast Ratio</b>	650	1000	5000	1000
<b>Viewing Angle</b>	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)
<b>Response Time</b>	6 ms	5 ms	18 ms	14ms
<b>Backlight</b>	LED	LED	LED	LED
<b>Touch Type</b>	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
<b>Touch Light Transmission</b>	80% +/- 3%	91 %	89 %	89 %
<b>Touch Controller</b>	USB touch (EETI)	USB touch (EETI)	USB touch (EETI)	USB touch (EETI)
<b>SBC</b>	EMX-APLP	EBM-BYT	ARC-SKLU	EMX-KBLUP
<b>Processor</b>	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
<b>System Chipset</b>	Intel® Pentium® SoC integrated	Intel® Valleyview SoC	Intel® Skylake U SoC integrated	Intel® Kabylake U SoC integrated
<b>I/O Chipset</b>	EC ITE IT8528	EC ITE IT8528E	EC ITE IT8518E	EC ITE IT8518E
<b>System Memory</b>	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
<b>Expansion</b>	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
<b>Storage</b>	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
<b>USB</b>	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
<b>COM Port</b>	N/A	1 x RS-232/422/485	1 x RS-232/422/485, 1 x RS-232	N/A
<b>Display Chipset</b>	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
<b>Audio</b>	Realtek ALC662 supports 2-CH	Realtek ALC892 Support 5.1-CH	Realtek ALC892 supports 5.1-CH	Realtek ALC892 supports 5.1-CH
<b>Audio Interface</b>	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
<b>Ethernet</b>	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
<b>Power Connector</b>	DC Jack, +12V ~ +24V	Lockable DC Jack, +12V ~ +26V	Lockable DC Jack, +12V ~ +26V	Lockable DC Jack, +12V ~ +24V
<b>Power Type</b>	AT / ATX	AT / ATX	AT / ATX	AT / ATX
<b>Adapter</b>	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)
<b>Construction (Front, Rear)</b>	White Plastic	Black Coverlens, Black	Plastic-black	Plastic-black
<b>Dimension</b>	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
<b>Weight</b>	4.7 Kg	4.54 Kg	6.3 Kg	7.2 Kg
<b>Operating Temperature</b>	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)
<b>Storage Temperature</b>	-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)
<b>Certification</b>	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B
<b>OS Information</b>	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
<b>LCD Size</b>	15", 4:3	17", 4:3	21.5"
<b>Display Type</b>	XGA	SXGA	Full HD
<b>Resolution</b>	1024 x 768	1280 x 1024	1920 x 1080
<b>Pixel Pitch</b>	0.297mm (H)x0.297mm (V)	0.264mm (H)x0.264mm (V)	0.248mm (H)x0.248mm (V)
<b>Luminance</b>	250 cd/m <sup>2</sup>	350 cd/m <sup>2</sup>	250 cd/m <sup>2</sup>
<b>Contrast Ratio</b>	700	800	1000
<b>Viewing Angle</b>	70 (U), 70 (D), 80 (L), 80 (R)	80 (U), 80 (D), 85 (L), 85 (R)	80 (U), 80 (D), 85 (L), 85 (R)
<b>Response Time</b>	16 ms	30 ms	5 ms
<b>Backlight</b>	LED	LED	LED
<b>Touch Type</b>	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive
<b>Touch Light Transmission</b>	80 %	80 %	80 %
<b>Touch Controller</b>	Onboard USB touch (EETI)		
<b>SBC</b>	EBM-BYT		
<b>Processor</b>	Intel® Celeron® J1900 4-Core 2.0GHz processor		
<b>System Chipset</b>	Intel® Valleyview SoC		
<b>I/O Chipset</b>	EC ITE IT8528E		
<b>System Memory</b>	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB		
<b>Expansion</b>	1 x Mini PCIe Supports mSATA		
<b>Storage</b>	1 x CompactFlash Type I/II Socket, 1 x 2.5" Drive Bay		
<b>USB</b>	1 x USB 3.0, 3 x USB 2.0		
<b>COM Port</b>	1 x RS-232/422/485		
<b>Display Chipset</b>	Intel® Valleyview SoC Integrated Graphics Supports dual display		
<b>Display Resolution</b>	HDMI: Max. resolution 1920 x 1200 @ 60Hz		
<b>Audio</b>	Realtek ALC892 Support 5.1-CH		
<b>Audio Interface</b>	Line-Out		
<b>Ethernet</b>	2 x Intel® I210IT		
<b>Power Connector</b>	Lockable DC Jack, +12V ~ +26V		
<b>Power Type</b>	AT/ATX (ATX is default setting)		
<b>Adapter</b>	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)		
<b>Construction (Front, Rear)</b>	White Plastic, Gray Plastic		
<b>Dimension</b>	351 x 319 x 54 mm	391.5 x 364.5 x 59 mm	542 x 382 x 63 mm
<b>Weight</b>	4.9 kg	5.9 kg	7.2 kg
<b>Operating Temperature</b>	0°C ~ 40°C (32°F ~ 104°F)		
<b>Storage Temperature</b>	-10°C ~ 50°C (14°F ~ 122°F)		
<b>Certification</b>	CE, FCC Class B		
<b>OS Information</b>	Win 7, Win 10, Linux		



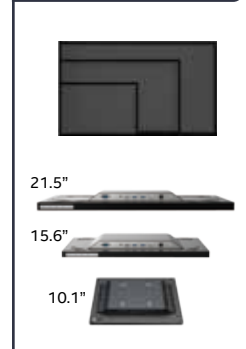
# Light Industrial Panel PC



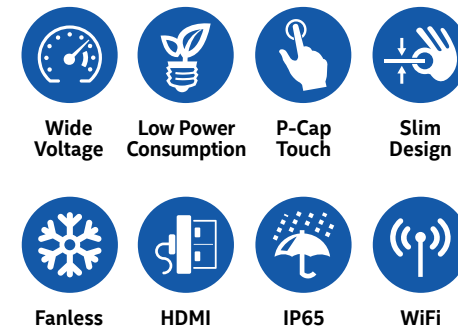
10.1" System Dimensions



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
<b>LCD Size</b>	10.1"	15.6"	21.5"
<b>Display Type</b>	WXGA	Full HD	Full HD
<b>Resolution</b>	1280 x 800	1920 x 1080	1920 x 1080
<b>Pixel Pitch</b>	0.1695 x 0.1695 mm	0.17925 x 0.17925 mm	0.24795 x 0.24795 mm
<b>Luminance</b>	350 cd/m <sup>2</sup>	220 cd/m <sup>2</sup>	250 cd/m <sup>2</sup>
<b>Contrast Ratio</b>	800	700	3000
<b>Viewing Angle</b>	85 (U), 85 (D), 85 (L), 85 (R)	85 (U), 85 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)
<b>Response Time</b>	30 ms	35ms	30ms
<b>Backlight</b>	LED	LED	LED
<b>Touch Type</b>	Projective Capacitive	Projective Capacitive	Projective Capacitive
<b>Touch Light Transmission</b>	86%	85%	88%
<b>SBC</b>	BCX12	BCX11	BCX11
<b>Processor</b>		Intel® Atom™ Z3735F 1.33GHz	
<b>I/O Chipset</b>		Intel® Atom™ SoC Integrated	
<b>Memory</b>		2GB DDR3L Memory on board	
<b>Storage</b>		32GB eMMC on board	
<b>Graphics</b>		Intel® Gen7 HD Graphic core	
<b>HDMI Resolution</b>		HDMI up to 1080p@30Hz	
<b>USB Port</b>		2 x USB 2.0 (Type A)	
<b>Serial Port</b>	N/A	1 x RS-232	1 x RS-232
<b>Audio Interface</b>		1 x Line-Out	
<b>Ethernet</b>		1 x Fast Ethernet, 10/100 Mbps	
<b>Wi-Fi</b>		802.11 b/g/n Built-in	
<b>Bluetooth</b>		Bluetooth 4.0 Built-in	
<b>Power Connector</b>		DC-in jack, 12 ~ 24V DC	
<b>Power Type</b>		AT	
<b>Adapter</b>		Input: 100 ~ 240 Vac/ 50 ~ 60Hz; Output: 65W Adapter (19V @ 3.42A Adapter)	
<b>Construction/Color</b>		Metal, Black	
<b>Mounting</b>	VESA 75 x 75	VESA 100 x 100	VESA 100 x 100
<b>Dimension</b>	255.2 x 169.4 x 33.3 mm	391 x 249 x 37 mm	505 x 303.3 x 41.7 mm
<b>Weight</b>	1.2 KG	2.4 KG	5.5 KG
<b>IP Rating</b>		Front IP65	
<b>Operating Temperature</b>		0°C ~ 40°C (32°F ~ 104°F)	
<b>Operating Humidity</b>		5% ~ 90% Relative Humidity, Non-Condensing	
<b>Certification</b>		CE, FCC Class B	
<b>OS Information</b>		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
<b>LCD Size</b>	10.1"	15.6"	10.1"	15.6"
<b>Display Type</b>	WXGA	Full HD	WXGA	Full HD
<b>Resolution</b>	1280 x 800	1920 x 1080	1280 x 800	1920 x 1080
<b>Pixel Pitch</b>	0.1695 x 0.1695 mm	0.17925 x 0.17925 mm	0.1695 x 0.1695 mm	0.17925 x 0.17925 mm
<b>Luminance</b>	350 cd/m <sup>2</sup>	220 cd/m <sup>2</sup>	350 cd/m <sup>2</sup>	220 cd/m <sup>2</sup>
<b>Contrast Ratio</b>	800	800	800	800
<b>Viewing Angle</b>	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)
<b>Response Time</b>	30 ms	30ms	30ms	30ms
<b>Backlight</b>	LED	LED	LED	LED
<b>Touch Type</b>	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
<b>Touch Light Transmission</b>	86%	85%	86%	85%
<b>SBC</b>	ACP-CHT3	ACP-CHT3	ACP-RK3288	ACP-RK3288
<b>Processor</b>		Intel® Atom™ x5-Z8350 1.44GHz		Rockchip RK3288 1.6GHz
<b>I/O Chipset</b>		Intel® Atom™ SoC Integrated		Rockchip SoC Integrated
<b>Memory</b>		2GB / 4GB DDR3L Memory on board		2GB DDR3L Memory on board
<b>Storage</b>		32GB / 64GB eMMC on board		16GB eMMC on board
<b>Graphics</b>		Intel® Gen8 HD Graphic core		ARM Mali-T764 GPU core
<b>HDMI Resolution</b>		HDMI up to 1080p@60Hz		HDMI up to 1080p@120Hz
<b>USB Port</b>		1 x USB 3.0 (Type A), 1 x USB 2.0 (Type A)		2 x USB 2.0 (Type A)
<b>Serial Port</b>		1 x RS-232		1 x RS-232
<b>Audio Interface</b>		1 x Line-Out		1 x Line-Out
<b>Ethernet</b>		1 x Fast Ethernet, 10/100 Mbps		1 x Gigabit Ethernet, 10/100/1000 Mbps
<b>Wi-Fi</b>		802.11ac/b/g/n Built-in		802.11 b/g/n Built-in
<b>Bluetooth</b>		Bluetooth 5.0 Built-in		Bluetooth 4.0 Built-in
<b>Power Connector</b>		DC-in jack, 12 ~ 24V DC		DC-in jack, 12 ~ 24V DC Powered LAN optional
<b>Power Type</b>		AT/ATX (AT is default setting)		AT/ATX (AT is default setting)
<b>Adapter</b>		Input: 100 ~ 240 Vac/ 50 ~ 60Hz; Output: 60W Adapter (12V @ 5A Adapter)		Input: 100 ~ 240 Vac/ 50 ~ 60Hz; Output: 60W Adapter (12V @ 5A Adapter)
<b>Construction/Color</b>		Metal, Black		Metal, Black
<b>Mounting</b>	VESA 75 x 75	VESA 100 x 100	VESA 75 x 75	VESA 100 x 100
<b>Dimension</b>	255.2 x 169.4 x 40.7 mm	391.2 x 239.2 x 48.14 mm	255.2 x 169.4 x 40.7 mm	391.2 x 239.2 x 48.1 mm
<b>Weight</b>	1.36 kg	3.59 kg	1.36 kg	3.59 kg
<b>IP Rating</b>		Front IP65		Front IP65
<b>Operating Temperature</b>		0°C ~ 40°C (32°F ~ 104°F)		0°C ~ 40°C (32°F ~ 104°F)
<b>Operating Humidity</b>		5% ~ 90% Relative Humidity, Non-Condensing		5% ~ 90% Relative Humidity, Non-Condensing
<b>Certification</b>		CE, FCC Class B		CE, FCC Class B
<b>OS Information</b>		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
<b>LCD Size</b>	15", 4:3	15", 4:3	21.5"
<b>Display Type</b>	XGA	XGA	WSXGA
<b>Resolution</b>	1024 x 768	1024 x 768	1920 x 1080
<b>Pixel Pitch</b>	0.297mm(H) x 0.297mm(W)	0.297mm (H) x 0.297mm (V)	248.25um (H) x 248.25um (V)
<b>Luminance</b>	1000cd/m <sup>2</sup>	250 cd/m <sup>2</sup>	250 cd/m <sup>2</sup>
<b>Contrast Ratio</b>	2500	700	3000
<b>Viewing Angle</b>	88(U), 88 (D), 88 (L), 88 (R)	70 (U), 70 (D), 80 (L), 80 (R)	89 (U), 89 (D), 89 (L), 89 (R)
<b>Response Time</b>	16 ms	16 ms	18 ms
<b>Backlight</b>	LED	LED	LED
<b>Touch Type</b>	Projective Capacitive with Anti-UV Coating, AG Coating for Cover Lens	Projective Capacitive	Projective Capacitive
<b>Touch Light Transmission</b>	95 % (By Optical Bonding)	87 %	89 %
<b>Touch Controller</b>	Onboard USB touch (EETI)	Onboard USB touch (EETI)	Onboard USB touch (EETI)
<b>SBC</b>	EBM-APL		
<b>Processor</b>	Onboard Intel® ATOM E3940 Processor	Onboard Intel® Apollo Lake Mobile Processor	
<b>System Chipset</b>	Intel® Apollo Lake SoC integrated		
<b>I/O Chipset</b>	EC ITE IT8528E		
<b>System Memory</b>	1 x 204-pin DDR3L 1866MTs SO-DIMM up to 8 GB		
<b>Expansion</b>	2 x Mini PCIe		
<b>Storage</b>	1 x 2.5" Drive Bay		
<b>USB</b>	2 x USB 2.0 (IP67 Waterproof Connector)	2 x USB 2.0 (IP67 Waterproof Connector)	3 x USB 3.0 (IP67 Waterproof Connector)
<b>COM Port</b>	1 x RS-232/422/485 (IP67 Waterproof Connector)		
<b>Other</b>	Optical Bonding, Anti-UV/IR Protection, Auto-Dimming, Light Sensor	1 x SATA II, 1 x WiFi	
<b>Display Chipset</b>	Intel® Apollo Lake SoC integrated Graphics Supports Dual Display		
<b>Audio</b>	Realtek ALC892		
<b>Audio Interface</b>	2 x 5W Speaker Output		
<b>Ethernet</b>	2 x Intel® I211AT (IP67 Waterproof Connector)		
<b>Power Connector</b>	4 Pin M8 Type, +12V ~ +26V		
<b>Power Type</b>	AT/ATX (ATX is default setting)		
<b>Adapter</b>	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (24V @ 2.5A Adapter) AC-DC Adapter		
<b>Construction (Front, Rear)</b>	Powder Coating Aluminum	Silver Stainless Steel	
<b>Operating Temperature</b>	-20°C ~ 60°C (-4°F ~ 140°F)	0°C ~ 40°C (32°F ~ 104°F)	
<b>Storage Temperature</b>	-30 to 70°C (-22°F ~ 158°F)	-20°C ~ 60°C (-4°F ~ 140°F)	-10°C ~ 60°C (14°F ~ 140°F)
<b>Certification</b>	CE, FCC Class B		
<b>OS Information</b>	Win10, Linux		
<b>IP Rating</b>	Full IP-67, NEMA4X	Full IP-65, IP-69K	
<b>Dimension</b>	399 x 323 x 52.50 mm	371 x 308 x 63.6 mm	595 x 403 x 57.5 mm
<b>Weight</b>	5.9 Kg	6.42 kg	9 kg

### Stainless Steel Panel PC - SPC Series

Model Number	SPC-1209	SPC-1509	SPC-1709	SPC-22W9
<b>LCD Size</b>	12.1", 4:3	15", 4:3	17", 4:3	22"
<b>Display Type</b>	XGA	XGA	SXGA	WSXGA
<b>Resolution</b>	1024 x 768	1024 x 768	1280 x 1024	1680 x 1050
<b>Pixel Pitch</b>	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)
<b>Luminance</b>	600 cd/m <sup>2</sup>	400 cd/m <sup>2</sup>	350 cd/m <sup>2</sup>	250 cd/m <sup>2</sup>
<b>Contrast Ratio</b>	700	700	800	1000
<b>Viewing Angle</b>	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)
<b>Response Time</b>	16 ms	16 ms	30 ms	5 ms
<b>Backlight</b>	LED	LED	LED	LED
<b>Touch Type</b>	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive
<b>Touch Light Transmission</b>	80 %	80 %	80 %	80 %
<b>Touch Controller</b>	Onboard USB touch (EETI)	Onboard USB touch (EETI)	Onboard USB touch (EETI)	Onboard USB touch (EETI)
<b>SBC</b>	EBM-BYT			
<b>Processor</b>	Intel® Atom™ E3845 4-Core 1.91GHz processor/ Intel® Celeron® J1900 2.0GHz processor			
<b>System Chipset</b>	Intel® Valleyview SoC			
<b>I/O Chipset</b>	EC ITE IT8528E			
<b>System Memory</b>	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB			
<b>Expansion</b>	1 x Mini PCIe Support mSATA 1 x Mini PCIe Supports SIM Card			
<b>Storage</b>	1 x CompactFlash Type I/II Socket 1 x 2.5" Drive Bay			
<b>USB</b>	2 x USB 2.0	2 x USB 2.0	3 x USB 2.0	3 x USB 2.0
<b>COM Port</b>	1 x RS-232			
<b>Other</b>	1 x SATA II, 1 x WiFi			
<b>Display Chipset</b>	Intel® Valleyview SoC integrated Graphics Supports dual display			
<b>Audio</b>	Realtek ALC892			
<b>Audio Interface</b>	2 x 5W Speaker Output			
<b>Ethernet</b>	1 x Intel® I210IT			
<b>Power Connector</b>	Waterproof DC Jack, +12V ~ +26V			
<b>Power Type</b>	AT/ATX (ATX is default setting)			
<b>Adapter</b>	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (24V @ 2.5A Adapter) AC-DC Adapter			
<b>Construction (Front, Rear)</b>	Front & Rear Silver Stainless, Black			
<b>Operating Temperature</b>	0°C ~ 40°C (32°F ~ 104°F)			
<b>Storage Temperature</b>	-20°C ~ 60°C (-4°F ~ 140°F)			
<b>Certification</b>	CE, FCC Class A			
<b>OS Information</b>	Win10, Linux			
<b>IP Rating</b>	Full IP-65, IP-69K			
<b>Dimension</b>	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
<b>Weight</b>	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
<b>LCD Size</b>	7"	10.1"	15.6"
<b>Resolution</b>	800 x 1280	1280 x 800	1920 x 1080
<b>Luminance</b>	300	350 / 1000	220
<b>Viewing Angle</b>	160° (H/V)	170° (H/V)	170° (H/V)
<b>Touch Type</b>	PCAP	PCAP	PCAP
<b>Processor</b>	Rockchip RK3288		
<b>System Memory</b>	2GB DDR3L RAM		
<b>Wireless</b>	802.11 b/g/n Wireless LAN		
<b>Storage</b>	16GB eMMC		
<b>External I/O Connector</b>	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		
<b>Internal I/O Connector</b>	1 x LVDS interface, 1 x MIPI interface 1 x USB Touch interface, 1 x I <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> C interface(7" & 10") 1 x RS232 (TX/RX) or RS485 1 x Micro SD slot
<b>Power Requirement</b>	DC 12 ~ 24V		
<b>Power Type</b>	DC Jack, DC input 4-pin header, optional Powered LAN 802.3AT	DC Jack, DC input 4-pin header	
<b>Operating Temperature</b>	0°C ~ 40°C		
<b>Storage Temperature</b>	-20°C ~ 60°C		
<b>Operating Humidity</b>	40°C @ 95% Relative Humidity, Non-condensing		
<b>Software Support</b>	Android 8.1		
<b>Dimension</b>	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
<b>Weight</b>	0.45 kg	0.7 kg	1.5 kg
<b>Certification</b>	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A

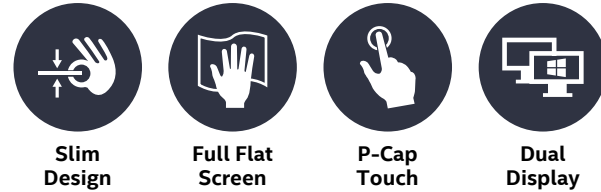
Open Frame Panel PC - OFT Series				
Model Number	OFT-07W01	OFT-10W01	OFT-15W01	OFT-21W01
<b>LCD Size</b>	7"	10.1"	15.6"	21.5"
<b>Resolution</b>	800 x 1280	1280 x 800	1920 x 1080	1920 x 1080
<b>Luminance</b>	300	350	220	250
<b>Viewing Angle</b>	160° (H/V)	170° (H/V)	178° (H/V)	178° (H/V)
<b>Touch Type</b>	PCAP	PCAP	PCAP	PCAP
<b>Processor</b>	Intel® Atom™ Processor Z3735F 1.33GHz Quad Core CPU			
<b>System Memory</b>	2GB DDR3L RAM			
<b>Wireless</b>	802.11 b/g/n WiFi			
<b>Storage</b>	32GB or 8GB eMMC			
<b>External I/O Connector</b>	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			
<b>Internal I/O Connector</b>	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 <sup>2</sup> C interface(7" & 10") 1 x RS232 (TX/RX) or RS485 1 x Micro SD slot			
<b>Power Requirement</b>	DC 12 ~ 24V			
<b>Power Type</b>	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
<b>Operating Temperature</b>	0°C ~ 40°C			
<b>Storage Temperature</b>	-20°C ~ 60°C			
<b>Operating Humidity</b>	40°C @ 95% Relative Humidity, Non-condensing			
<b>Software Support</b>	Windows 10/ Android 4.4/ Android 5.1/ Ubuntu 16.04			
<b>Dimension</b>	116 x 184 x 25 mm	252 x 166 x 38 mm	387 x 235 x 38 mm	500 x 292 x 47 mm
<b>Weight</b>	0.5 kg	0.7 kg	1.5 kg	3 kg
<b>Certification</b>	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**

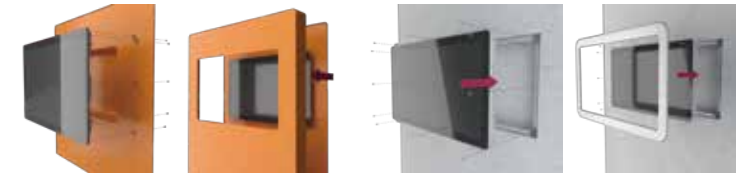
**Full Flat Screen**

**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

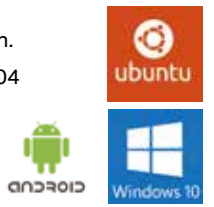


Flush Mounting

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
<b>LCD Size</b>	7"	10.1"	15.6"	10.1"	15.6"	21.5"
<b>Resolution</b>	800 x 1280	1280 x 800	1920 x 1080	800 x 1280	1920 x 1080	1920 x 1080
<b>Luminance</b>	300	350	220	350	220	250
<b>Viewing Angle</b>	160° (H/V)	170° (H/V)	170° (H/V)	170° (H/V)	170° (H/V)	178° (H/V)
<b>Touch Type</b>	PCAP	PCAP	PCAP	P-CAP	P-CAP	P-CAP
<b>Processor</b>	Intel® Atom™ x5-Z8350: 2M Cache, up to 1.92 GHz			Intel® Celeron® J3455 2M Cache 1.50 GHz		
<b>System Memory</b>	2G / 4G DDR3L RAM			1 x 204 pin SO-DIMM DDR3L 4GB		
<b>Wireless</b>	802.11a/b/g/n/ac Wireless LAN			802.11a/b/g/n/ac (2230)		
<b>Storage</b>	32G / 64G eMMC			32GB (eMMC) / M.2 3042 SSD		
<b>External I/O Connector</b>	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		
<b>Internal I/O Connector</b>	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)		
<b>Power Requirement</b>	DC 12 ~ 24V			DC 12V~24V		
<b>Power Type</b>	1 x DC-in Jack 1 x DC-in wafer			1 x DC-in Jack 1 x DC-in wafer		
<b>Operating Temperature</b>	0°C ~ 40°C			0°C ~ 40°C		
<b>Storage Temperature</b>	-20°C ~ 60°C			-20°C ~ 60°C		
<b>Operating Humidity</b>	40°C @ 95% Relative Humidity, Non-condensing			40°C @ 95% Relative Humidity, Non-condensing		
<b>Software Support</b>	Win 10 / Ubuntu 19.04			Win 10 / Ubuntu		
<b>Dimension</b>	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
<b>Weight</b>	0.5 kg	0.7 kg	1.5 kg	0.8 kg	1.7 kg	3.8 kg
<b>Certification</b>	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
<b>LCD Size</b>	7", 16:10	15.6", 16:9	21.5", 16:9	15.6", 16:9	21.5", 16:9
<b>Resolution</b>	1280 x 800	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
<b>Luminance</b>	300 cd/m²	220 cd/m²	250 cd/m²	220 cd/m²	250 cd/m²
<b>Viewing Angle</b>	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)
<b>Touch Type</b>	Projective Capacitive Multi-Touch supports up to 10 points			Projective Capacitive Multi-Touch supports up to 10 points	
<b>Processor</b>	Onboard Intel® Celeron® N3350/J3455 SoC BGA Processor			Onboard 8th Gen Intel® Whiskey Lake U Core™ SoC i7/i5/i3 & Celeron® BGA Processor	
<b>System Memory</b>	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	
<b>Wireless</b>	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+	
<b>Storage</b>	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)	
<b>I/O Connector</b>	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)	
<b>Option Features</b>	Available Panel mount kits, Wall mount kits by option				
<b>Power Requirement</b>	+12V~26V DC in	+12V~24V DC in 3 pins Phoenix connector and Lockable DC Jack Extend Power Connector for on/off or Reset			
<b>Power Type</b>	AT/ATX (Default is AT Mode)				
<b>Operating Temperature</b>	0°C ~ 45°C (32°F ~ 113°F)				
<b>Storage Temperature</b>	-20°C ~ 60°C (-4°F ~ 140°F)				
<b>Operating Humidity</b>	0% ~ 90% Relative Humidity, Non-condensing				
<b>Software Support</b>	Windows 10 IoT, Linux, x86 Android 8.1			Windows 10 IoT, Linux	
<b>Dimension</b>	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
<b>Weight</b>	1.1 kg	2.5 Kg	4.1 Kg	2.5 Kg	4.1 Kg
<b>Certification</b>	CE, FCC Class A				



# Desktop POS



### Slim & Fanless Design



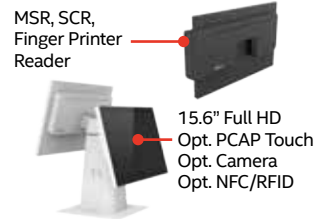
### Quick Rail



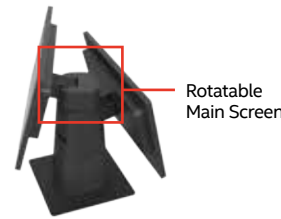
### Built-in RFID/ NFC



### 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

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

## New POS Terminal

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

## POS Terminal

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



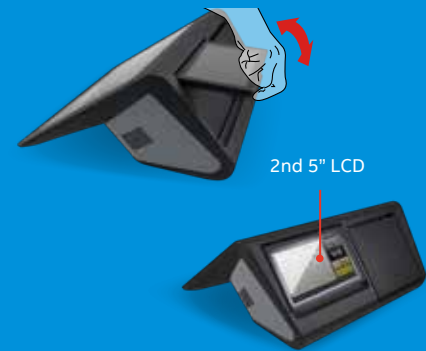
## Mini POS Terminal

### Stylish Design



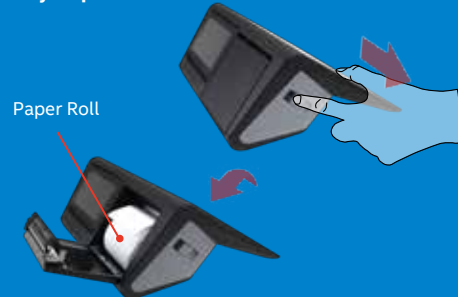
### Customer Display

- 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
<b>Processor</b>	Intel® Atom™ Z3735F 1.33GHz Processor	Intel® Celeron® N3350 1.1GHz Processor	Intel® Celeron® N3350 1.1GHz Processor
<b>System Memory</b>	2GB DDR3L SDRAM	4GB DDR3L SDRAM (Option for 2GB DDR3L SDRAM)	4GB DDR3L SDRAM (Option for 2GB DDR3L SDRAM)
<b>Storage</b>	32G (Default)/64G (Optional) eMMC	64G eMMC/ Option for 128GB	64G eMMC/ Option for 128GB
<b>Operating System</b>	Windows 10, Android 4.4 / 5.1	Windows 10, Android 8.1, Linux	Windows 10, Android 8.1, Linux
<b>LCD Panel</b>	10.1" LCD, 5" LCD (customer facing)		13.3" LCD, 5" LCD (customer facing)
<b>Resolution</b>	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")
<b>Touch Screen</b>	Projected Capacitive Touch		
<b>Wireless LAN</b>	Built-in IEEE 802.11 b/g/n	IEEE 802.11 a/b/g/n/ac (Optional)	
<b>Bluetooth</b>	Built-in Bluetooth 4.0 + Class 1	Bluetooth 5.0 (Optional)	
<b>Serial Port</b>	2 x RS-232 in DB9, Powered with 5/12V		
<b>USB Port</b>	4 x USB2.0	4 x USB 3.0	
<b>SD card</b>	N/A	1 x SD card slot support up to 128GB	
<b>LAN Port</b>	1 x RJ45	2 x RJ45 (Realtek 8111H)	
<b>Cash Drawer</b>	1 x RJ11 (12V/24V)		
<b>NFC</b>	ISO/IEC 14443 A/B, 15693/18092		
<b>Thermal Printer</b>	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		
<b>Power Type</b>	19.5V/ 6.15A 120W		
<b>Dimensions</b>	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
<b>Weight</b>	3 kg±10%	3 kg±10%	4.1 kg±10%
<b>Operating Temperature</b>	5°C ~ 40°C (41°F~104°F)		
<b>Storage Temperature</b>	-10°C ~ 60°C (14°F ~ 140°F)		
<b>Operating Humidity</b>	0 ~ 95% non-condensing		
<b>Certifications</b>	CE/FCC/VCCI/CCC		CE/FCC/VCCI

## Medical Semi-Rugged Tablet

Model Number	CAXAO
<b>Processor</b>	Intel® Celeron® N3350 1.1GHz Processor
<b>System Memory</b>	Onboard 4GB LPDDR4
<b>Storage</b>	64GB Solid State Drive
<b>Operating System</b>	Windows 10
<b>LCD Size/Resolution</b>	10.1", WXGA/1280x800
<b>Luminance</b>	300 cd/m <sup>2</sup>
<b>Touch Screen</b>	10 Points Projective Capacitive
<b>Wireless LAN</b>	802.11 a/b/g/n/ac
<b>Bluetooth</b>	Bluetooth 4.1
<b>Camera</b>	2MP Front Camera 8MP Rear Camera With Auto Focus
<b>NFC</b>	ISO/IEC 14443 A/B, 15693/18092, NFCIP-1, NFCIP-2, Support MIFARE and Felica
<b>Barcode Scanner</b>	1D/2D Barcode Scanner (Optional)
<b>Smart Card Reader</b>	Half-Slot, Reads ISO 7816-1, 2, 3 & 4, T=0 & T=1; 5V Smart Card Reader (Optional)
<b>MSR</b>	N/A
<b>Downside I/O Connectors</b>	1 x Audio Jack, 2 x USB 2.0 Type A, 1 x Micro SD, 1 x DC Jack, 1 x HDMI Output
<b>Control Button</b>	1 x Power Button, 1 x Barcode Scanner Trigger
<b>LED Indicator</b>	1 x Power
<b>Power Requirement</b>	DC Jack +19V
<b>Battery</b>	28.44W Li-Polymer Battery
<b>Battery Operating Time</b>	6 hours
<b>Construction</b>	Rubber + Plastic
<b>Dimensions</b>	281 x 193.3 x 19.95 mm
<b>Weight</b>	1 kg
<b>Operating Temperature</b>	0°C ~ 40°C (32°F ~ 104°F)
<b>Storage Temperature</b>	-20°C ~ 60°C (-4°F ~ 140°F)
<b>IP Rating</b>	IP65
<b>Certifications</b>	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)
<b>Downside I/O Connectors</b>	3 x USB2.0, 1 x 10/100 Mbit/s RJ45 LAN		4 Bay battery slots
<b>LED Indicator</b>	link indicator LED		LED Indicator, Charging status for each slot
<b>Power Requirement</b>	DC Jack +19V		
<b>Dimensions</b>	180 x 198.2 x 129.2 mm	143.6 x 218.8 x 48.6 mm	159 x 105 x 57.9 mm
<b>Weight</b>	1.05 Kg	0.58 kg	0.62 Kg
<b>Operating Temperature</b>	0°C ~ 45°C (32°F~113°F)		
<b>Storage Temperature</b>	-10°C~60°C		
<b>IP Rating</b>	IPX1		N/A
<b>Certifications</b>	CE/ FCC		





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