



Empowering a
SMART FUTURE
Avalue IoT Ready

- Healthcare
- Retail
- Transportation
- Industry 4.0
- Digital Signage
- Communication
- Surveillance
- Automation
- In-Vehicle
- Gaming



3.5" Single Board Computer



3.5" Single Board Computer

Model Number	ECM-CFS	ECM-KBLH	ECM-SKLH	ECM-WHL
Processor	8/9th Gen Intel® Core™ i7/i5/i3/Celeron® rPGA processor	7th Gen Intel® Core™ i7/i5/i3/Celeron® processor	6th Gen Intel® Core™ i7/i5/i3/Celeron® processor	8th Gen Intel® Core™ i7/i5/i3/Celeron® Processor (with CPU Bottom Mounted)
System Chipset	Intel® Q370/H310 Express Chipset	Intel® QM175 Express Chipset	Intel® QM170 Express Chipset	N/A
System Memory	1 x 260-Pin DDR4 2400MHz SO-DIMM up to 32 GB	1 x 260-Pin DDR4 2400MHz SO-DIMM up to 16 GB	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	2X 260-pin DDR4 2400MHz SO-DIMM up to 64GB
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec.	H/W Reset, 1sec. ~ 65535sec.	H/W Reset, 1sec. ~ 65535sec.	H/W Reset, 1sec. ~ 65535sec.
Expansion	1 x Mini PCIe Supports mSATA (Q370 support mPCIe/mSATA/USB2.0 device, H310 support mSATA/USB2.0 device)	1 x Mini PCIe Supports mSATA 1 x M.2 (2242) B-Key	1 x Mini PCIe Supports mSATA 1 x M.2 (2242) B-Key	1 x M.2 (2242/3042) B Key, (SATA, USB3.0/2.0, SIM Slot) 1 x M.2 E Key 2230, (PCIe, USB2.0, CNVI)
Storage	1 x mSATA Supported from Mini PCIe	1 x mSATA Supported from Mini PCIe, 1 x M.2 (M.2 support SATA or PCIe x1/USB)	1 x mSATA Supported from Mini PCIe, 1 x M.2 (M.2 support SATA or PCIe x1/USB)	1 x SATA III 1 x M.2 B Key (2242)
I/O	2 x USB 2.0, 4 x USB 3.1, 2 x SATA III, 2 x RS-232, 1 x 8bit GPIO, 1 x LPC, 1 x SPI	2 x USB 2.0, 4 x USB 3.0, 2 x SATA III, 1 x RS-232, 1 x RS-232/422/485, 1 x 8bit GPIO, 1 x LPC, 1 x SPI	2 x USB 2.0, 4 x USB 3.0, 2 x SATA III, 1 x RS-232, 1 x RS-232/422/485, 1 x 8bit GPIO, 1 x LPC, 1 x SPI	2 x USB 2.0, 4 x USB 3.1, 1 x SATA III, 1 x 8-bit GPIO, 1 x LPC, 1 x SPI
Display Chipset	Intel® UHD Graphics 630 Intel® UHD Graphics 610 H310 only support Dual Display: LVDS+HDMI1 (default LVDS enable) or HDMI1+HDMI2 (LVDS disabled) Q370 support Triple Display	Intel® Kaby lake SoC integrated Graphics Supports triple display	Intel® Skylake SoC integrated Graphics Supports triple display	Intel® UHD Graphics 620 (i7-8665UE, i5-8365UE, i3-8145UE), Intel® UHD Graphics 610 (4305UE) support triple display
Resolution	Dual HDMI: Max. resolution 4096 x 2304 @ 30Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	Dual HDMI: Max. resolution 4096 x 2160 @ 24Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	Dual HDMI: Max. resolution 4096 x 2160 @ 24Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	Dual HDMI: Max. Resolution 4096 x 2160 @ 24/30Hz, LVDS: Max. resolution 1920 x 1080 @ 60Hz
Audio Chipset	Realtek ALC892 supports 5.1-CH Mic-In, Line-In, Line-Out	Realtek ALC233 supports 2.1-CH Audio Amp.:2W	Realtek ALC233 supports 2.1-CH Audio Amp.:2W	Realtek ALC892, supports 5.1-CH Mic-In, Line-Out
Ethernet Chipset	1 x Intel® I211AT 1 x Intel® I219LM	1 x Intel® I210AT 1 x Intel® I219LM	1 x Intel® I210AT 1 x Intel® I219LM	1 x Intel® I210AT 1 x Intel® I219LM
Power Requirement	+12V	+12V	+12V	+12V
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	5.7" x 4" (146mm x 101mm)			



3.5" Single Board Computer

ECM-KBLU	ECM-SKLU	ECM-APL	ECM-APL2	ECM-BSWA
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
N/A	N/A	N/A	N/A	N/A
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
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
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
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
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
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
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 VGA: 1920 x 1200 @ 60Hz	HDMI: Max. resolution 1920 x 1080 @ 30Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz
Realtek ALC892, supports 5.1-CH Mic-In, Line-In, Line-Out	Realtek ALC892 supports 5.1-CH Mic-In, Line-In, Line-Out	Realtek ALC892 supports 5.1-CH Mic-In, Line-In, Line-Out	Realtek ALC892 supports 5.1-CH Mic-In, Line-In, Line-Out	Realtek ALC892 supports 5.1-CH Mic-In, Line-In, Line-Out
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
+12V ~ +26V	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V
AT/ATX	AT/ATX	AT/ATX	AT/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) -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)
5.7" x 4" (146mm x 101mm)				



3.5" Single Board Computer



3.5" Single Board Computer				
Model Number	ECM-BYT2	ECM-BYT	ECM-KA	ECM-A50M
Processor	Intel® Atom™/ Celeron® processor (with CPU Bottom Mounted)	Intel® Atom™/ Celeron® processor	AMD G-Series processor	AMD G-Series processor
System Chipset	N/A	N/A	N/A	AMD G-Series A50M Chipset
System Memory	1 x 204-Pin DDR3L 1066/1333MHz SO-DIMM up to 8 GB	1 x 204-Pin DDR3L 1066/1333MHz SO-DIMM up to 8 GB	1 x 204-Pin DDR3 1600MHz SO-DIMM up to 8 GB	1 x 204-Pin DDR3 1066MHz SO-DIMM up to 4 GB
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec and 1sec. or 1min./step	H/W Reset, 1sec. ~ 65535sec and 1sec. or 1min./step	H/W Reset, 1sec. ~ 65535sec.	H/W Reset, 1sec. ~ 65535sec./min. and 1sec. or 1min./step
Expansion	2 x Mini PCIe, 1 x Full-size Mini PCIe with mSATA Supported, 1 x Half-size Mini PCIe	1 x Mini PCIe Supports mSATA	1 x Mini PCIe Supports mSATA	1 x Mini PCIe Supports mSATA
Storage	1 x mSATA Supported from Mini PCIe	1 x CompactFlash Type I/II Socket 1 x mSATA Supported from Mini PCIe	1 x CompactFlash Type I/II Socket 1 x mSATA Supported from Mini PCIe	1 x CompactFlash Type I/II Socket
I/O	7 x USB 2.0, 1 x USB 3.0, 1 x SATA II, 1 x RS-232, 1 x RS-232/422/485, 1 x 8bit GPIO, 1 x LPC	5 x USB 2.0, 1 x USB 3.0, 1 x SATA II, 3 x RS-232, 1 x RS-232/422/485, 1 x 8bit GPIO, 1 x LPC, 1 x PS2/ KB & MS	6 x USB 2.0, 2 x USB 3.0, 2 x SATA III, 1 x RS-232, 1 x RS-232/422/485, 1 x 8bit GPIO, 1 x LPC, 1 x SPI, 1 x PS2/ KB & MS	7 x USB 2.0, 2 x SATA II, 1 x RS-232, 1 x RS-232/422/485, 1 x 16bit GPIO, 1 x LPC, 1 x SPI, 1 x PS2/ KB & MS
Display Chipset	Intel® Valleyview SoC integrated Graphics Supports dual display	Intel® Valleyview SoC integrated Graphics Supports dual display	AMD SoC Integrated Graphics Supports dual display	AMD Fusion Accelerated Processors Supports dual display
Resolution	VGA: Max. resolution 2560 x 1080 @ 60Hz HDMI: Max. resolution 1920 x 1200 @ 60Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	VGA: Max. resolution 2560 x 1080 @ 60Hz HDMI: Max. resolution 1920 x 1200 @ 60Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	VGA: Max. resolution 1920 x 1200 @ 60Hz HDMI: Max. resolution 1920 x 1080 @ 60Hz LVDS: Max. resolution 1920 x 1080 @ 60Hz	For T56N: VGA: 2560 x 1600 @ 75Hz LVDS: 2048 x 1536 @ 75Hz For T40E: VGA: 1920 x 1200 @ 75Hz LVDS: 1920 x 1200 @ 75Hz
Audio Chipset	Realtek ALC892 Supports 5.1-CH Mic-In, Line-In, Line-Out	Realtek ALC892 Supports 5.1-CH Mic-In, Line-In, Line-Out	Realtek ALC892 supports 5.1-CH Mic-In, Line-In, Line-Out	Realtek ALC892 supports 5.1-CH Mic-In, Line-In, Line-Out
Ethernet Chipset	2 x Realtek 8111E	2 x Intel® I211AT	2 x Realtek 8111E	2 x Realtek 8111E
Power Requirement	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V	+12V
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F) -40°C ~ 85°C (-40°F ~ 185°F) (Optional for Wide Temp.)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	5.7" x 4" (146mm x 101mm)			



Mini-ITX



Mini ITX					
Model Number	EMX-C246P	EMX-Q170KP	EMX-Q170P	EMX-H110KP	EMX-H110P
Processor	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)	Intel® LGA1151 Socket Supports 6/7th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors (Max. TDP at 95W)	Intel® LGA1151 Socket Supports 6th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors (Max. TDP at 95W)
System Chipset	Intel® C246 Chipset	Intel® Q170 Chipset		Intel® H110 Chipset	
System Memory	2 x 260-pin DDR4 2400/2666MHz SO-DIMM supports up to 64GB (ECC memory supported by CPU)	2 x 260-pin DDR4 2400MHz SO-DIMM supports up to 32GB		2 x 260-pin DDR4 2400MHz SO-DIMM supports up to 32GB	
Expansion	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		1 x PCI-e x16 1 x Full Size Mini PCI-e 1 x Half Size Mini PCI-e	
Display	Intel® 8/9th Gen. CPU integrated VGA + HDMI + LVDS	Intel® 6/7th Gen. CPU integrated VGA + LVDS, VGA + HDMI, VGA + DP, HDMI + LVDS, HDMI + DP, LVDS + DP		Intel® 6/7th Gen. CPU integrated VGA + LVDS, VGA + HDMI, VGA + DP, HDMI + LVDS, HDMI + DP, LVDS + DP	
Resolution	VGA: 2048 x 1536 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 30Hz 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)		VGA: 2048 x 1536 @ 50Hz HDMI: 4096 x 2160 @ 24Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz Dual channel 18/24-bits LVDS (Chrontel CH7511B eDP to LVDS)	
Audio	Realtek ALC662 6W Audio Amplifier	Realtek ALC892 Mic-in, Line-out, Line-in 6W Audio Amplifier		Realtek ALC892 Mic-in, Line-out, Line-in 6W Audio Amplifier	
Ethernet	1 x Intel® I219LM 3 x Intel® I210AT	1 x Intel® I219LM 1 x Intel® I211AT		1 x Intel® I219LM 1 x Intel® I211AT	
USB/SATA/COM/LAN	13/4/6/4	12/6/6/2		8/4/6/2	
Power Requirement	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V		+12V/+5V/5VSB/+3.3V/-12V	
Power Type	AT/ATX	AT/ATX		AT/ATX	
Operating Temp.	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)		0°C ~ 60°C (32°F ~ 140°F)	
Dimension (L x W)	6.69" x 6.69" (170mm x 170mm)	6.69" x 6.69" (170mm x 170mm)		6.69" x 6.69" (170mm x 170mm)	
Weight	0.88lbs (0.4kg)	0.88lbs (0.4kg)		0.88lbs (0.4kg)	



Thin Mini-ITX



Thin Mini-ITX					
Model Number	EMX-WHLGP	EMX-KBLU2P	EMX-APLP	EMX-SKLUP	EMX-SKLG
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	Intel® Pentium®/ Celeron®/ Atom™ SoC Processor	Onboard 6th Gen. Intel® Core™ & Celeron® BGA Processor	Onboard 6th/7th Gen. Intel® Core™ & Celeron® BGA Processor
System Chipset	N/A	N/A	N/A	N/A	N/A
System Memory	2 x 260-pin DDR4 2400MHz SO-DIMM supports up to 32GB	2 x 260-pin DDR4 2133MHz SO-DIMM supports up to 32GB	2 x 204-pin DDR3L 1333/1600MHz SO-DIMM supports up to 16GB	2 x 260-pin DDR4 2133MHz SO-DIMM supports up to 32GB	2 x 260-pin DDR4 2133 MHz SO-DIMM supports up to 32GB
Expansion	1 x 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 2 x Mini PCI-e 1 x SD card slot 1 x SIM card slot	1 x PCI-e x1 1 x M.2 B-Key, 1 x M.2 A-Key, 1 x SD card slot (Optional)	1 x Mini PCI-e 1 x M.2 A-Key
Display	Intel® 8th Gen. CPU integrated HDMI/LVDS, HDMI, HDMI	Intel® 6th/ 7th Gen. CPU integrated DP++, HDMI/DP, LVDS	Intel® Apollo Lake SoC integrated Gen Graphics Supports triple display HDMI + LVDS, HDMI/DP + DP, HDMI + LVDS	Intel® 6th Generation CPU integrated Triple Display	Intel® Skylake U SoC integrated Graphics Triple Display HDMI + LVDS + VGA
Resolution	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 @ 30Hz, 2560 x 1600 @ 30Hz 2 x DP: DisplayPort 1.2a : 4096 x 2160 @ 60Hz (1 x HDMI/DP, 1 x DP++) 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)	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-lay 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-lay eDP 1.3: 4096 x 2160 BOM optional
Audio	Realtek ALC892 Mic-in, Line-out, Line-in 2 x 6W Audio Amplifier	Realtek ALC892 Mic-in, Line-out, Line-in 2 x 6W Audio Amplifier	Realtek ALC662 supports 2-CH Mic-in, Line-out 2 x 3W Audio Amplifier	Realtek ALC892 supports 5.1-CH Mic-in, Line-out 2 x 6W Audio Amplifier	Realtek ALC892 supports 2-CH Mic-in, Line-out 2 x 6W Audio Amplifier
Ethernet	1 x Intel® I219LM 2 x Intel® I210IT	1 x Intel® I219LM 1 x Intel® I210IT	2 x Intel I211AT	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT
USB/SATA/COM/LAN	8/1/6/3	8/2/6/2	9/2/6/2	8/2/6/2	12/2/6/2
Power Requirement	+12V~24V	+12V~24V	+12V~24V	+12V~24V	+12V~24V
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temp.	-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)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	6.69" x 6.69" (170mm x 170mm)	6.69" x 6.69" (170mm x 170mm)	6.69" x 6.69" (170mm x 170mm)	6.69" x 6.69" (170mm x 170mm)	6.69" x 6.69" (170mm x 170mm)
Weight	0.88lbs (0.4kg)	0.88lbs (0.4kg)	0.88lbs (0.4kg)	0.88lbs (0.4kg)	0.88lbs (0.4kg)



Thin Mini-ITX

EMX-BSWP	EMX-BYT3	EMX-BYT2	EMX-BSWB	EMX-C246DP	EMX-H310DP
Intel® Celeron® Processor N3160 (2M Cache, up to 2.24 GHz)	Intel® Celeron® Processor J1900 (2M Cache, Up to 2.42 GHz)	Intel® Celeron® Processor J1900 (2M Cache, Up to 2.42 GHz)	Intel® Celeron® Processor N3160 (2M Cache, up to 2.24 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
N/A	N/A	N/A	N/A	Intel® C246 Chipset	Intel® H310 Chipset
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	2 x 204-pin DDR3L 1333MHz SO-DIMM supports up to 8GB	2 x 204-pin DDR3L 1600MHz 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
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	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 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
Intel® Atom™/ Celeron® SoC Integrated Graphics HDMI + LVDS, HDMI + VGA, VGA + 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	Intel® Atom™/ Celeron® SoC Integrated Graphics HDMI + LVDS + VGA	Intel® 8/9th Gen. CPU integrated HDMI + HDMI + LVDS	Intel® 8/9th Gen. CPU integrated HDMI + HDMI + LVDS
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	VGA: 2560 x 1600 @ 60Hz HDMI: 1920 x 1200 @ 60Hz LVDS: 1920 x 1080 @ 60Hz	VGA: 2560 x 1600 @ 60Hz HDMI: 3840 x 2160 @ 30Hz LVDS: 1920 x 1200 @ 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
Realtek ALC662 supports 2-CH Mic-in, Line-out 2 x 3W Audio Amplifier	Realtek ALC662 supports 2-CH Mic-in, Line-out 2 x 3W Audio Amplifier	Realtek ALC662 supports 2-CH Mic-in, Line-out 2 x 3W Audio Amplifier	Realtek ALC662 supports 2-CH Mic-in, Line-out 2 x 3W Audio Amplifier	Realtek ALC662 6W Audio Amplifier	Realtek ALC662 6W Audio Amplifier
2 x Intel® I211AT	2 x Intel® I211AT	2 x Intel® I211AT	1 x RTL8111F	1 x Intel® I219LM 2 x Intel® I210AT	1 x Intel® I219LM 2 x Intel® I210AT
8/2/6/2	6/2/8/2	6/2/6/2	7/2/1/1	10/2/4/3	8/2/4/3
+12V	+12V ~ 24V	+12V	+12V	+12V ~ 28V	+12V ~ 28V
AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/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)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
6.69" x 6.69" (170mm x 170mm)	6.69" x 6.69" (170mm x 170mm)	6.69" x 6.69" (170mm x 170mm)	6.69" x 6.69" (170mm x 170mm)	6.69" x 6.69" (170mm x 170mm)	6.69" x 6.69" (170mm x 170mm)
0.88lbs (0.4kg)	0.88lbs (0.4kg)	0.88lbs (0.4kg)	0.88lbs (0.4kg)	0.88lbs (0.4kg)	0.88lbs (0.4kg)



ATX / Micro ATX/ Pico ITX



ATX					
Model Number	EAX-C246P	EAX-C246BP	EAX-Q170KP (C236KP)	EAX-Q170P	EAX-H110KP
Processor	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)	Intel® LGA1151 Socket Supports 6th Gen. Core™, Pentium®/ Celeron® Processors (Max. TDP at 95W)	Intel® LGA1151 Socket Supports 6/7th Gen. Core™, Pentium®/ Celeron® Processors (Max. TDP at 95W)
System Chipset	Intel® C246 Chipset	Intel® C246 Chipset	Intel® Q170 Chipset (Co-lay C236 Chipset)	Intel® Q170 Chipset	Intel® H110 Chipset
System Memory	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)	4 x 288-pin DDR4 2400MHz DIMM supports up to 64GB	2 x 288-pin DDR4 2400MHz DIMM supports up to 32GB
Expansion	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	4 x PCI, 1 x PCI-e x16 1 x PCI-e x4, 1 x PCI-e x1 1 x M.2 Key-A, 1 x SIM card slot, 1 x Full/Half Size Mini-PCIe	4 x PCI, 1 x PCI-e x16, 2 x PCI-e x4
Display	Intel® 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	Intel® 6th Gen. CPU Integrated VGA + HDMI + DP	Intel® 6/7th Gen. CPU Integrated VGA + HDMI + DP
Resolution	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	VGA: 2048 x 1536 @ 50Hz HDMI: 4096 x 2160 @ 24Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz	VGA: 2048 x 1536 @ 50Hz HDMI: 4096 x 2160 @ 24Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz
Audio	Realtek ALC892 Mic-in, Line-in, Line-out 1 x 6W Audio Amplifier	Realtek ALC892 Mic-in, Line-in, Line-out 1 x 6W Audio Amplifier	Realtek ALC892 Mic-in, Line-in, Line-out 2 x 6W Audio Amplifier	Realtek ALC892 Mic-in, Line-in, Line-out 2 x 6W Audio Amplifier	Realtek ALC892 Line-in, Mic-in, Line-out 1 x 2W Amplifier
Ethernet	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I210AT	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT
USB/SATA/COM/LAN	14/6/10/2	16/4/10/2	12/6/6/2	12/6/6/2	10/4/10/2
Power Requirement	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5Vsb/+3.3V/-12V	+12V/+5V/5Vsb/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temp.	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	12" x 9.6" (304.8mm x 243.84mm)	12" x 9.6" (304.8mm x 243.84mm)	12" x 9.6" (304.8mm x 243.84mm)	12" x 9.6" (304.8mm x 243.84mm)	12" x 9.6" (304.8mm x 243.84mm)
Weight	1.32lbs (0.6kg)	1.32lbs (0.6kg)	1.32lbs (0.6kg)	1.32lbs (0.6kg)	1.32lbs (0.6kg)



EAX-H81P
Intel® LGA1150 Socket Supports 4th Gen. Core™ Refresh, Pentium®/ Celeron® Processors (Max. TDP at 95W)
Intel® H81 Chipset
2 x 240-pin DDR3 1333/1600MHz DIMM socket, supports up to 16GB Max
4 x PCI, 1 x PCI-e x16, 1 x PCI-e x2, 1 x PCI-e x1
Intel® 4th Gen. CPU Integrated VGA + HDMI + DP
VGA: 2048 x 1536 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 30Hz DP: 3840 x 2160 @ 60Hz
Realtek ALC892 Line-in, Mic-in, Line-out 1 x 3W Amplifier
2 x Intel® I211AT
13/4/10/2
+12V/+5V/5Vsb/+3.3V/-12V
AT/ATX
0°C ~ 60°C (32°F ~ 140°F)
12" x 9.6" (304.8mm x 243.84mm)
1.32lbs (0.6kg)

Micro ATX		
ERX-H110KP	ERX-C236KP	ERX-H110
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)	Intel® LGA1151 Socket Supports 6th Gen. Core™, Pentium®/Celeron® Processors (Max. TDP at 95W)
Intel® H110 Chipset	Intel® C236 Chipset	Intel® H110 Chipset
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)	2 x 288-pin DDR4 2400MHz DIMM supports up to 32GB
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	1 x PCI-e x16, 2 x PCI-e x1, 1 x M.2 Key-M
Intel® 6/7th Gen. CPU Integrated HDMI + VGA, HDMI + DP, VGA + DP	Intel® 6/7th Gen. CPU Integrated HDMI + HDMI, HDMI + VGA, VGA + HDMI	Intel® 6th Gen. CPU Integrated HDMI + DVI-D
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	HDMI 1.4: 4096 x 2160 @ 24Hz, 2560 x 1600 @ 60Hz DVI-D: 1920 x 1080 @ 60Hz
Realtek ALC892 Mic-in, Line-in, Line-out 2 x 6W Audio Amplifier	Realtek ALC662 Line-in, Mic-in, Line-out 2 x 3W Amplifier	Realtek ALC662 Mic-in, Line-in, Line-out
1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 3 x Intel® I211AT	1 x RTL8111GS
8/4/6/2	13/6/10/4	10/4/1/1
+12V/+5V/5Vsb/+3.3V/-12V	+12V/+5V/5Vsb/+3.3V/-12V	+12V/+5V/5Vsb/+3.3V/-12V
AT/ATX	AT/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" (243.84mm x 243.84mm)	9.6" x 9.6" (243.84mm x 243.84mm)	9.6" x 7.5" (243.84mm x 190mm)
1.35lbs (0.6kg)	1.35lbs (0.6kg)	1.1lbs (0.5kg)

Pico ITX
EPX-APLP
Intel® Pentium®/ Celeron®/Atom™ SoC Processor
N/A
1 x 204-pin DDR3L 1600 & 1333MHz SO-DIMM supports up to 8 GB
1 x PCI-e x1 1 x M.2 Key-B, 1 x M.2 Key-A, 1 x SIM card slot
Intel® Atom™/ Celeron®/Pentium® SoC Integrated Graphics HDMI + LVDS, HDM/DP/DP + DP, HDMI + 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)
Realtek ALC662 supports 2-CH Mic-in, Line-out 2 x 3W Audio Amplifier
2 x Intel® I211AT
6/1/6/2
+12V
ATX
0°C ~ 60°C (32°F ~ 140°F)
3.93" x 2.83" (100mm x 72mm)
0.88lbs (0.4Kg)



ARM-based SBC

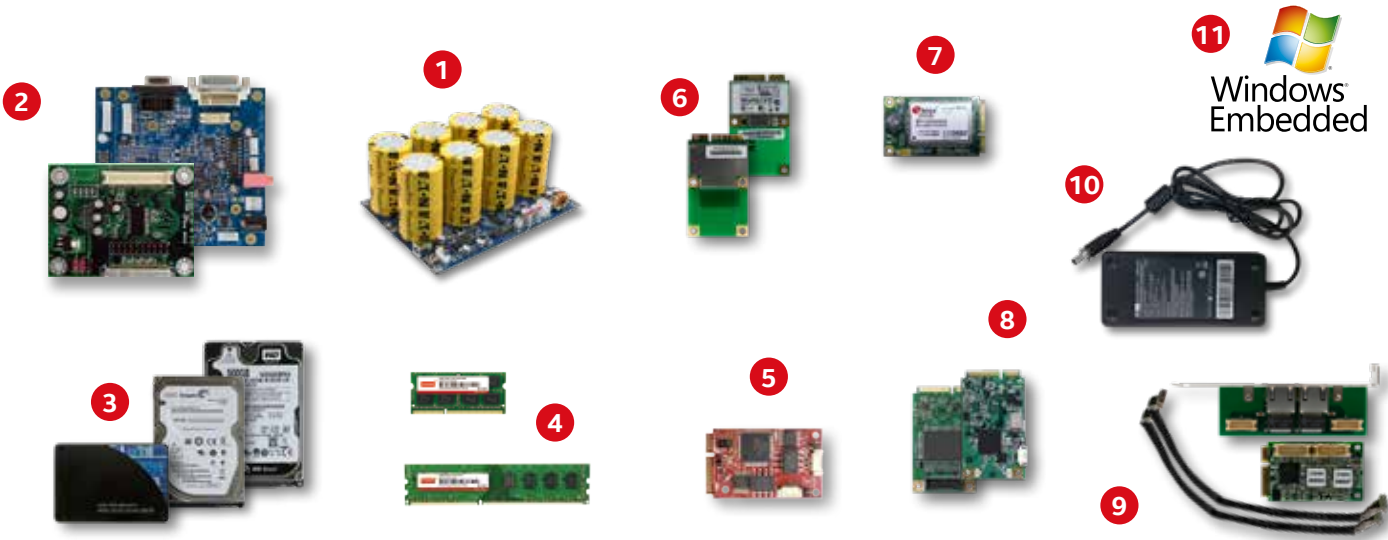


ARM-based SBC

Model Number	RSC-IMX61	ACP-IMX6POS	RSC-BCX6
Processor	NXP i.MX 6 Dual Lite NXP i.MX 6 Quad Core	NXP i.MX 6 Dual Lite NXP i.MX 6 Quad Core	NXP i.MX 6 Solo
System Memory	1GB DDR3 expandable to 2 GB	1GB DDR3 (Dual Lite) 2GB DDR3 (Quad Core) expandable to 2 GB	512 MB DDR3 expandable to 1 GB
Storage	eMMC 4GB	eMMC 4GB	N/A
External I/O Connector	1 x USB2.0 Type A x2 (Double deck) 1 x HDMI with screw lock 1 x 10/100/1000 LAN Optional Powered LAN support (IEEE 802.3at), 1 x Micro SD socket, 1 x Jack for I/R extender cable, co-design (Optional) with on board I/R sensor (Optional)	1 x USB2.0 Type A x2 (Double deck) 1 x 10/100/1000 LAN Optional 2nd 1 x 10/100/1000 LAN (RJ45x1), 1 x HDMI Connector (Vertical Type) 1 x Mini USB Connector 1 x RJ11 Connector for Cash Drawer 2 x DB9 Male Connector (COM 1 & 2 can be select from RS232/422/485) 1 x DC 12V Power Input by Power DC Jack 1 x Micro SD socket	1 x Line-Out 2 x USB 2.0 1 x Micro USB Connector (USB OTG) 1 x HDMI 1 x RJ-45 1 x Barrel Type Connector 1 x DC-in Jack
Internal I/O Connector	1 x USB2.0, 1 x USB OTG 1 x 2x5 GPIO, 1 x LVDS 24bit x2 1 x Backlight control 1 x Line-out, speaker-out Mic-in, 1 x Mini-PCIe (half size) 1 x I ² C, 1 x SATA (i.MX6 Quad only) 1 x Battery connector for RTC 1 x debug port, 1 x RS232	2 x RS232, 1 x debug port 1 x LVDS 24bit x2, 1 x Backlight control 1 x VGA, 1 x I ² C 3 x USB pin header 1 x 5-wire Resistive Touch Interface 1 x Dual Channel 24-bit LVDS 1 x Stereo Speaker-out 1 x Mini PCIe (Full size) 1 x SIM Socket 1 x Front Panel Connector with Power Button & Indicate LED for Power & WIFI 1 x Battery connector for RTC	1 x LVDS, 1 x Backlight control 1 x USB 2.0, 1 x RS232 1 x 8 bits GPIO 1 x Front Panel, 1 x Battery connector for RTC 1 x I ² C, 1 x CAN Bus, 1 x Mic-in, 1 x Line-out (Optional), 1 x Micro SD socket 1 x Mini PCIe (Half size) 1 x SIM Socket
Power Requirement	12 ~ 26V DC input, 2.5mm DC Jack, typical 19V input With brownout detection or Powered LAN	12 ~ 24V DC input	5V DC input
Operating Temperature	-20°C ~ 85°C (-4°F ~ 185°F)	A Version 0°C ~ 60°C (32°F ~ 140°F) B Version -20°C ~ 85°C (-4°F ~ 185°F)	0°C ~ 60°C (32°F ~ 140°F)
Storage Temperature	-40°C ~ 85°C	-40°C ~ 85°C (-40°F ~ 185°F)	-20°C ~ 80°C (-4°F ~ 176°F)
Dimension (L x W)	146mm x 102mm	175mm x 110mm	120mm x 78mm
Weight	0.15kg	0.16kg	0.1kg
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class A
Software Support	Android 4.4 / 6.0 Ubuntu 12.04 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



Peripherals & Accessories



Peripherals & Accessories

	Embedded Peripherals	Description
1	Power Board	EPM-1718 60W DC to DC Marine Power Module EPM-1715 Super Cap Power Module
2	Display Board	EPM-1525 VGA/DVI to TTL/LVDS Scalar Module EPM-1530 18/24 bit LVDS Receiver Module
	Accessories	Description
3	Industrial Flash Storage	Flash Disk: HDD/SSD Flash Card: CF/CFast Flash Module: mSATA/SATA DOM
4	Industrial DRAM Module	- Type: DDR2~DDR4 - Capacity:1GB~16GB - Wide temperature
5	CANBus Module	- Form Factor :mPCIe - Dual Channel CAN 2.0B - Wide temperature :-40° to 85°C
6	Wi-Fi Module	- Form Factor: mPCIe/ M.2 - Bluetooth supported
7	3G/4G Module	3G/ 4G Wireless Ublox Mini PCIe module (3G Plus GPS)
8	Capture Card	Mini SDI/HDV capture card w/H.264 High Profile encoding
9	Mini LAN Port	2-port 10/100/1000 Ethernet board
10	Power Adapter	AC DC Adapter 60W/84W/120W
11	Microsoft Windows Embedded OS	Avalue provides Embedded Software to customers who integrated Avalue's hardware products. Windows Embedded Stardard 7/8 Window 10 IoT Enterprise



EPM-1718
60W DC to DC Marine 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
- Efficiency up to 92.8%
- Dimension:100mm x 80mm

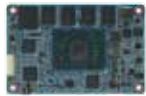


EPM-1715
Supercap Power Module

- 400F Super-Cap 4-Cell 12V AT Power Module, 6-cell and 8-cell model with Super-Cap pack board combined
- Recharging for 400,000 ~ 500,000 Times
- Max. Output Power 80W
- Operation Temp: 0°C ~ 65°C



COM Express Type 10 / Type 6



COM Express Type 10	
Model Number	ESM-APLM
Processor	Intel® Pentium®/ Celeron® SoC Processor
System Memory	1 x 204-pin DDR3L 1866 SO-DIMM up to 8 GB
Expansion	1 x PCIe4
USB	6 x USB 2.0 2 x USB 3.0
SATA	2 x SATA III
COM Port	N/A
MIO	1 x SMBus 1 x LPC
Display Chipset	Apollo lake SoC integrated Graphics
Display	LVDS, DDI
Audio	Intel® High Definition Audio
Ethernet	1 x Intel® WGI211AT
Power Requirement	+4.75V ~ +20V
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	3.31" x 2.17" (84mm x 55mm)
Certification	CE, FCC Class B

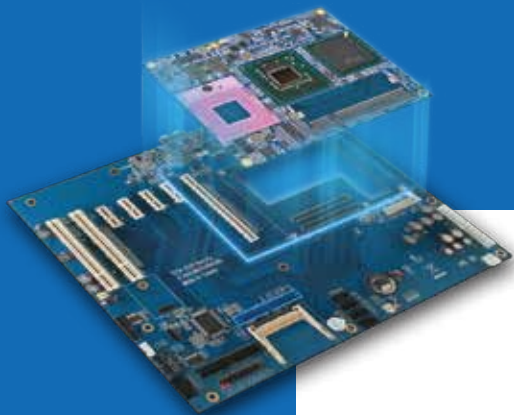
COM Express Type 6 - Compact Module				
	ESM-KBLU	ESM-SKLU	ESM-APLC	ESM-BYT2
Processor	7th Gen Intel® Core™ i7/i5/i3/Celeron® processor	6th Gen Intel® Core™ i7/i5/i3/Celeron® processor	Intel® Pentium®/ Celeron® SoC Processor	Intel® Atom™/Celeron® processor
System Memory	2 x 260-pin DDR4 2133MHz SO-DIMM 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)
Expansion	8 x PCIe1	8 x PCIe1	3 x PCIe1	3 x PCIe1
USB	8 x USB 2.0 4 x USB 3.0	8 x USB 2.0 4 x USB 3.0	8 x USB 2.0 4 x USB 3.0	7 x USB 2.0 1 x USB 3.0
SATA	3 x SATA III	4 x SATA III	2 x SATA III	2 x SATA II
COM Port	2 x UART	2 x UART	1 x UART	2 x UART
MIO	1 x SMBus 1 x LPC 1 x I ² C 1 x SPI	1 x SMBus 1 x LPC 1 x I ² C 1 x SPI	1 x SMBus 1 x LPC 1 x I ² C	1 x SMBus 1 x LPC 1 x I ² C
Display Chipset	Intel® Kabylake SoC integrated Graphics	Intel® Skylake Processor integrated Graphics	Apollo lake SoC integrated Graphics	Intel® Valleyview SoC integrated Graphics
Display	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI
Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® Valleyview SoC integrated
Ethernet	1 x Intel® I219LM	1 x Intel® I219LM	1 x Intel® WGI211AT	1 x Intel® I211AT
Power Requirement	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V
Operating Temperature	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
Dimension (L x W)	3.7" x 3.7" (95mm x 95mm)	3.7" x 3.7" (95mm x 95mm)	3.7" x 3.7" (95mm x 95mm)	3.7" x 3.7" (95mm x 95mm)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B



COM Express Type 6 - Basic Module

ESM-CFH	ESM-KBLH	ESM-KBLA	ESM-SKLH	ESM-SKLA	ESM-BYT
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
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)
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
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
4 x SATA III	4 x SATA III	4 x SATA III	4 x SATA III	4 x SATA III	2 x SATA II
2 x UART	2 x UART	2 x UART	2 x UART	2 x UART	1 x UART
1 x SMBus 1 x LPC 1 x I ² C 1 x SPI	1 x SMBus 1 x LPC 1 x I ² C	1 x SMBus 1 x LPC 1 x I ² C	1 x SMBus 1 x LPC 1 x I ² C	1 x SMBus 1 x LPC 1 x I ² C	1 x SMBus 1 x LPC 1 x I ² C
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
VGA, LVDS, DDI	VGA, LVDS, DDI	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® High Definition Audio	Intel® High Definition Audio	Intel® Valleyview SoC integrated
1 x Intel® I219LM	1 x Intel® I219LM	1 x Intel® I219LM	1 x Intel® I219LM	1 x Intel® I219LM	1 x Intel® I211AT
+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V
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
5" x 3.7" (125mm x 95mm)	5" x 3.7" (125mm x 95mm)	5" x 3.7" (125mm x 95mm)	5" x 3.7" (125mm x 95mm)	5" x 3.7" (125mm x 95mm)	5" x 3.7" (125mm x 95mm)
CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B

EVAL CARRIER BOARD



COM EXPRESS

The COM Express is a highly integrated and compact Computer On Module form factor.

It integrates Process and Chipset core features while all I/O and bus signals mapped two low profile, high density connectors.

It can be used in a design process much like an integrated circuit component



High Performance Requirements



Variety of Size
Basic:125x95mm
Compact:95x95mm
Mini:84x55mm



High Graphics Computing



High-End Designs and Markets



Extremely Feature-Rich



Eval Carrier Board

Model Number	EEV-EX16	EEV-EX15	EEV-EX14
USB	4 x USB 2.0, 4 x USB 3.1	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)
SATA	4 x SATA III (On Board)	2 x SATA III (On Board)	4 x SATA II (On Board)
COM Port	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)
Video	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 VGA, 1 x HDMI, 1 x LVDS (1 x LVDS on board)
Other	1 x SDIO, 1 x LAN	1 x LAN	1 x PS2/ KB & MS, 1 x SDIO, 2 x LAN
DIO	1 x 8bit GPIO	1 x 8bit GPIO	1 x 8bit GPIO
MIO	N/A	N/A	1 x IrDA
Expansion	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
Audio Chipset	ALC892	ALC892	ALC892
Audio Interface	Mic-In and Line-Out	Mic-In and Line-Out	Mic-In, Line-In and Line-Out
Power Requirement	ATX	ATX	AT/ATX
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	9.6" x 9.6" (243.84mm x 243.84mm)	6.7" x 6.7" (170mm x 170mm)	9.6" x 9.6" (243.84mm x 243.84mm)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B



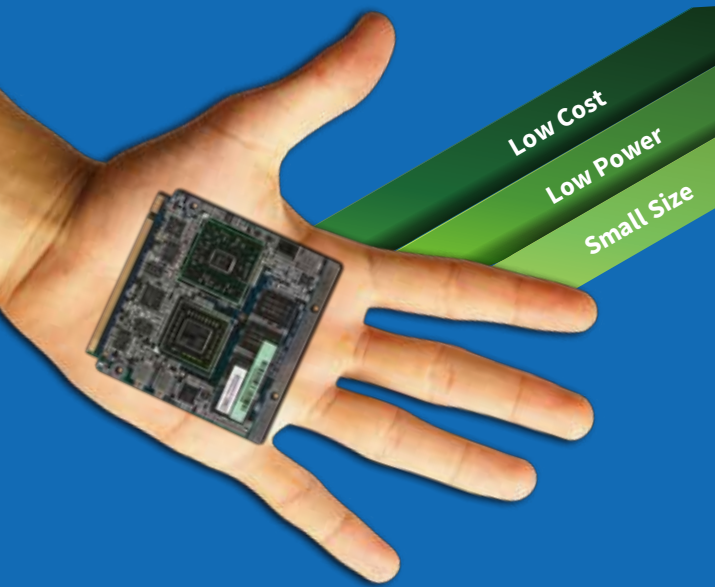
SMARC



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

SMARC Eval Carrier Board		
Model Number	REV-SA01	REV-SA02
Processor	N/A	N/A
System Memory	N/A	N/A
Storage	N/A	N/A
External I/O Connector	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
Internal I/O Connector	1 x LVDS, 1 x Backlight, 1 x SD Socket, 1 x USB Connector, 2 x CAN BUS, 1 x Speaker-out/Mic-in, 1 x RS-232, 1 x GPIO, 1 x SATA, 1 x RTC Battery, 1 x 2 Cell Li Battery Connector	1 x Camera, 2 x Speaker, 1 x D-MIC, 1 x Mini PCIe (SATA), 1 x Mini PCIe (USB), 1 x Sim Card, 1 x GPIO, 1 x I ² C, 1 x USB2.0, 1 x PCIe-1, 1 x LVDS, 1 x Battery charger connect, 1 x Inverter, 2 x RS485, 2 x CAN
Power Requirement	+9V ~ 36V DC-in (REV-SA01-02-A1R) +9V ~ 24V DC-in (REV-SA01-03-A1R)	DC +12V
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)	-40°C ~ 85°C (-40°F ~ 185°F)
Storage Temperature	-20°C ~ 80°C (-40°F ~ 176°F)	-40°C ~ 85°C (-40°F ~ 185°F)
Dimension (L x W)	146mm x 101mm	170mm x 170mm
Weight	0.13kg	0.024kg
Certification	CE, FCC Class B	CE, FCC Class B
Software Support	N/A	N/A

QSEVEN SOLUTION



QSEVEN SOLUTION Small Form Factor for Ultra Mobile Applications

- Freely available industry standard
- Defined for low cost
- High performance interfaces
- Fast serial interfaces
- Compact size
- Perfect for new low power chipsets & processors



Low Profile
Design



Low Power
Consumption



Compact
Form Factor



Excellent for
IoT Projects



Cost Effective
Solution for High
Volume Project



Qseven Carrier Board

Model Number	EEV-Q702	REV-Q703 (A/B)
USB	4 x USB 2.0, 1 x USB 3.0 (4 x USB on board, 1 x USB 3.0 external)	4 x USB 2.0, 2 x USB 3.0 (2 x USB on board, 2 x USB 3.0/ 1 x USB external)
SATA	2 x SATA II (On Board)	2 x SATA (On board)
COM Port	1 x UART (1 x UART External)	1 x RS-232
Video	1 x HDMI, 1 x Display Port, 1 x LVDS (1 x eDP, 1 x LVDS on board)	1 x HDMI, 1 x LVDS, 1 x DP, 1 x eDP (1 x LVDS & 1 x eDP on board)
Other	1 x SDIO, 1 x LAN, 1 x SPI, 1 x LPC	External I/O Connector 1 x Ethernet, 1 x SD socket, 3 x Audio phone jack Internal I/O connector 1 x GPIO, 1 x PCIe x1, 1 x mPCIe, 1 x SPI, 1 x CAN, 1 x LPC, 1 x JFP (Miscellaneous Setting Connector), 1 x PWM CPU Fan Header 1 x PWR Header
DIO	1 x 16bit GPIO	1 x 16 bit GPIO
MIO	1 x SD socket	1 x SD socket for version A 1 x Micro SD socket for version B
Expansion	1 x PCIe x1, 1 x Mini PCIe Supports SIM Card	1 x Mini PCIe Supports SIM Card
Audio Chipset	Realtek ALC892	ALC892/ WM8962
Audio Interface	Mic-In, Line-In, Line-Out	Mic-In, Line-In, Line-Out
Power Requirement	ATX	DC +12V
Operating Temperature	-40°C ~ 85°C (-40°F ~ 185°F)	-40°C ~ 85°C (-40°F ~ 185°F)
Dimension (L x W)	6.69" x 6.69" (170mm x 170mm)	6.69" x 6.69" (170mm x 170mm)
Certification	CE, FCC Class B	CE, FCC Class B



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

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 ncreases and greater efficiency.

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



MARITIME

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

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



Transportation System (Marine)

Model Number	EMS-SKLU-Marine
Board	EBM-SKLUS + AUX-M07
Processor	i7-6600U, i5-6300U, i3-6100U, Celeron 3955U
System Memory	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB
Expansion	1 x M.2 Key B, Size 2242/ 3042 (SATA/ PCIe/ USB3.0) 1 x Mini PCIe
Storage	1 x 2.5" Drive Bay, 1 x M.2 (SATA)
USB	4 x USB 3.0, 2 x USB 2.0
COM Port	2 x RS-232/422/485 (Jumper) 4 x RS-232/422/485 (BIOS, 2.5KV isolation)
Other	2 x SIM Card Slot, 1 x SMBus, 2 x PS2/ KB & MS 2 x Antenna mounting w/ cover
DIO	1 x 12-bit GPIO
Display Chipset	Intel® HD Graphics 520/ 510
Display Resolution	DP: Max. resolution 4096x2304 @ 60Hz
Audio Chipset	Realtek ALC892 supports 2.1-CH
Audio Interface	Mic-In, Line-In and Line-Out
Ethernet Chipset	2 x Intel® I211AT
Ethernet Interface	2 x RJ45
Power Requirement	Typical 12/24Vdc (+9V ~ +36V) TVS component for surge protection
ACPI	Single power ATX Supports S0, S3, S4, S5; ACPI 5.0 Compliant
Power Mode	AT/ATX (ATX is the default setting)
Dimension (L x W x H)	9.45" x 5.96" x 2.95" (240 x 151.5 x 75mm)
Operating Temperature	(w/SSD), ambient w/ air flow -20°C ~ 60°C (-4°F ~ 140°F)
Certification Information	CE, FCC Class A, IEC 60945



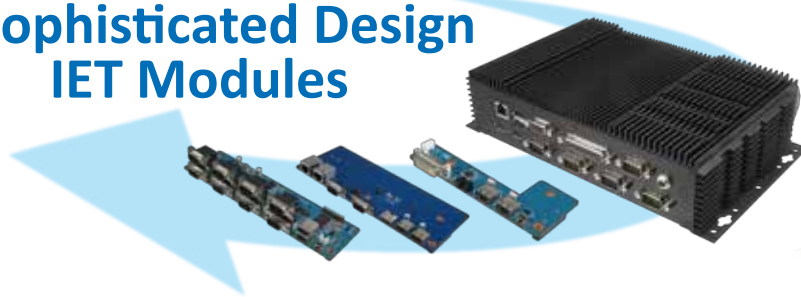
Transportation System (Vehicle)

VMS-CFS	VMS-APL	VMS-BYT
EBM-CFSV	EBM-APLV	EBM-BYTV
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	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 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)	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	4 x USB 3.0	2 x USB 2.0, 1 x USB 3.0
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	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	1 x 8-bit GPIO
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: 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 ALC892 HD codec	Realtek ALC892 supports 2.1-CH	Realtek ALC892 supports 5.1-CH
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	2 x Intel® I211AT	2 x Intel® I211AT
2 x RJ45; 4 x Port RJ45/ M12, supports 802.3af PoE (optional)	2 x RJ45	2 x RJ45
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, 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
8.27" x 9.45" x 4.33" (210mm x 240mm x 110mm)	9.45" x 7.3" x 2.44" (239mm x 186mm x 62mm)	9.45" x 7.3" x 2.36" (240mm x 186mm x 60mm)
With extended temperature peripherals w/ air flow: ST: -25°C ~ 70°C (14°F ~ 122°F) (default) WT: -40°C ~ 70°C (-40°F ~ 158°F) (Factory Option)	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 B, E13 Mark, ISO7637-2, IP50 Rating	CE, FCC Class A, E13 Mark, ISO7637-2, IP50 Rating



Wide Temperature System

Sophisticated Design IET Modules



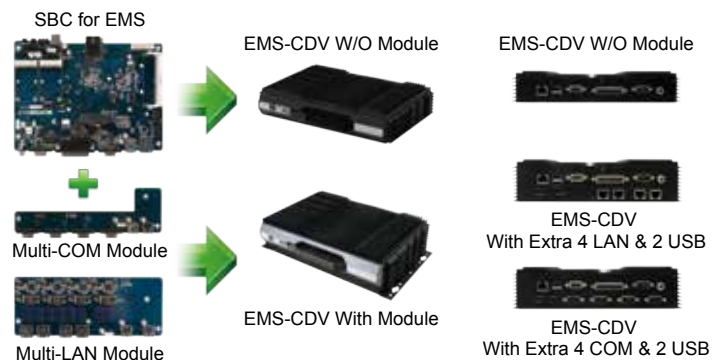
Wide Temperature System

Model Number	EMS-SKLU	EMS-BYT
Board	EBM-SKLUS	EBM-BYTS
Processor	i7-6600U/ i5-6300U/ i3-6100U/3955U	J1900/ E3845
System Memory	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB
Expansion	1 x Avalue 80-Pin IET Module Interface 1 x M.2 Key B, Size 2242/ 3042 (SATA/ PCIe/ USB3.0) 1 x Mini PCIe	1 x Avalue 80-Pin IET Module Interface 2 x Mini PCIe
Storage	1 x 2.5" Drive Bay 1 x M.2 (SATA)	1 x 2.5" Drive Bay 1 x mSATA
USB	4 x USB 3.0	1 x USB 3.0, 2 x USB 2.0
COM Port	2 x RS-232/422/485 (BIOS + DIP Switch), supports auto-flow	2 x RS-232/422/485 (BIOS)
Other	2 x SIM Card Slot, 1 x SMBus, 2 x PS2/ KB & MS, 2 x Antenna mounting w/ cover	1 x SIM Card Slot, 1 x SMBus 2 x PS2/ KB & MS, 2 x Knockouts for Antenna Mounting
DIO	1 x 12bit GPIO	1 x 12bit GPIO
Display Chipset	Intel® HD Graphics 520/510	Intel® HD Graphics for Intel Atom® Processor Z3700 Series
Display Resolution	DP: Max. resolution 4096 x 2304 @ 60Hz	VGA:Max. resolution 2560 x 1080 @ 60Hz
Audio Chipset	Realtek ALC892 supports 2.1-CH	Realtek ALC892 supports 2.1-CH
Audio Interface	Mic-In, Line-In, Line-Out	Mic-In, Line-In, Line-Out
Ethernet Chipset	1 x Intel® I211AT, 1 x Intel® I219LM	1 x Intel® I211AT
Ethernet Interface	2 x RJ45	1 x RJ45
Power Connector	3-Pin Terminal Block	Lockable DC Jack
Power Requirement	Typical +12 ~ +24Vdc (+9V ~ +32Vdv)	+12V ~ +26V TVS component for surge protection Reverse current/voltage protection
ACPI	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5 ACPI 5.0 Compliant
Power Mode	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)
Adapter	Optional AC-DC Adapter	Input: 100 ~ 240Vdc/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter) AC-DC Adapter
Construction	Aluminum + Metal	Aluminum + Metal + Plastic
Dimension (L x W x H)	Standard: 9.45" x 5.96" x 1.77" (240mm x 151.5mm x 45mm) w/ IET module: 9.45" x 5.96" x 2.36" (240mm x 151.5mm x 60mm)	Standard: 9.45" x 6.69" x 1.77" (240mm x 170mm x 45mm) w/ IET module: 9.45" x 6.69" x 2.36" (240mm x 170mm x 60mm)
Operating Temperature	(w/SSD), ambient w/ air flow -20°C ~ 60°C (-4°F ~ 140°F) (w/HDD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)	(w/SSD), ambient w/ air flow -15°C ~ 60°C (5°F ~ 140°F) (w/HDD), ambient w/ air flow 0°C ~ 45°C (32°F ~ 113°F) For Valleyview I SoC (w/SSD), ambient w/ air flow -40°C ~ 75°C (-40°F ~ 167°F)
Certification Information	CE, FCC Class A	CE, FCC Class B

The product described may contain design defects or errors known as errata which may cause the product to deviate from published specifications.



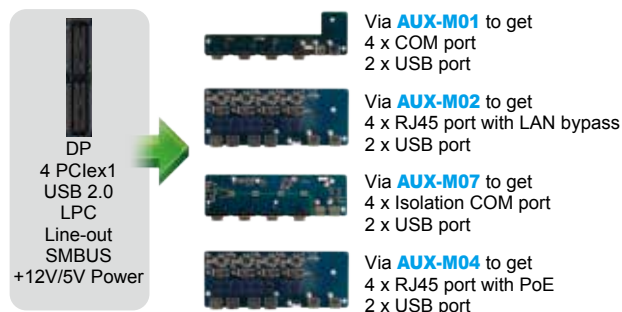
Modularization via IET Module



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



IET Module Options

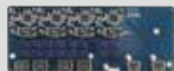
AUX-M01



4COM Module

Expand
+ 4 x COM, 2 x USB

AUX-M02



4LAN bypass Module

Expand
+ 4 x LAN, 2 x USB

AUX-M03



8COM Isolation Module

Expand
+ 8 x COM, 2 x USB

AUX-M04



4LAN PoE 802.3af Module

Expand
+ 4 x PoE, 2 x USB

AUX-M08



32GPIO Isolation + 4LAN PoE 802.3af Module

Expand
+ 4 x PoE, 32 x GPIO

EBM-CDVS DB-A



DVI-D Module

Expand
+ DVI-D + 2 x USB

EBM-BYTS DB-A



HDMI Module

Expand
+ HDMI, 2 x USB,
2 x COM, 2 x LAN

EBM-BYTS DB-E



USB Module

Expand
+ 4 x USB 3.0, 3 x USB 2.0

EBM-BYTV DB-B



Mini PCIe Module

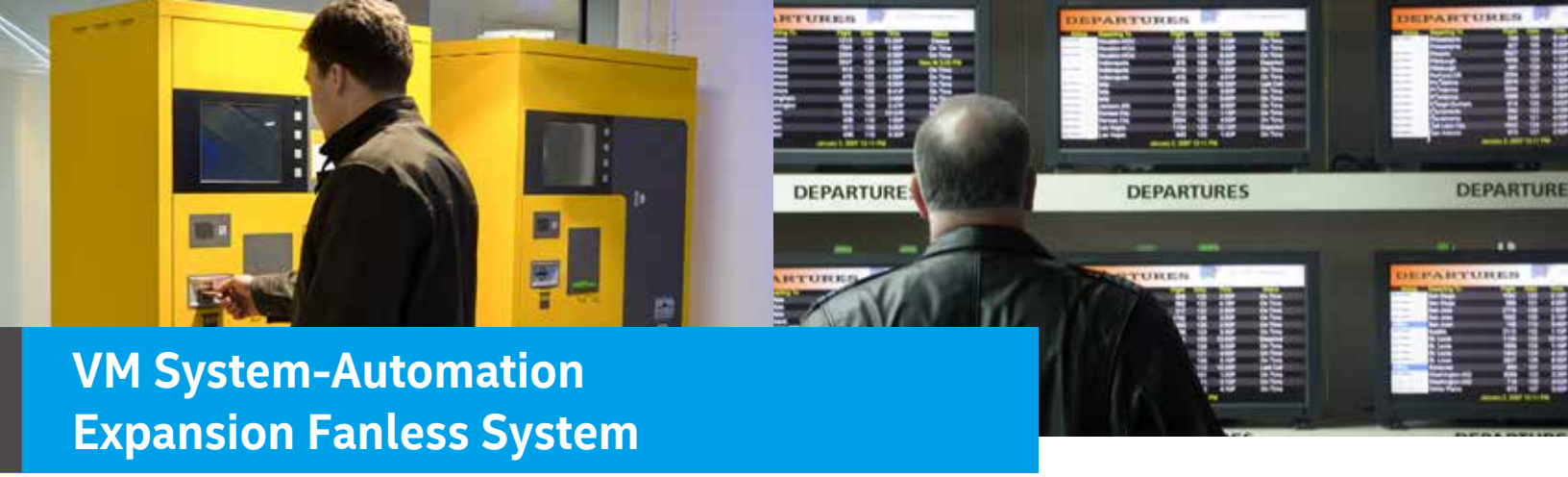
Expand
+ 2 x Mini PCIe
w/ 2 SIM + DVI-D

EBM-CFSV DB-B



4LAN PoE 802.3af Module (M12)

Expand
+ 4 x PoE (M12)



VM System-Automation Expansion Fanless System



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

Expandable Fanless System	
EPS-QM87	EPS-BYT-PCI
EAP-CE02 + ESM-QM87	EBM-BYTS
i7-4700EQ/i5-4422E/i3-4100E	EBM-BYTS
2 x 204-pin DDR3L 1600MHz SO-DIMM up to 16GB	1 x 204-pin DDR3L 1333MHz SO-DIMM up to 8GB
2 x PCI (Factory Option w/1 x PCIe16 + 1 x PCI) 2 x Full Size Mini PCIe	1 x Mini PCIe 2 x PCI
2 x 2.5" Drive Bay	1 x 2.5" Drive Bay 1 x mSATA
4 x USB 2.0, 4 x USB 3.0	4 x USB 2.0
4 x RS-232 4 x RS-232/422/485 (BIOS)	6 x RS-232/422/485
1 x LPT Port 1 x Power on/off (Control-By-Wire)	1 x SIM Card Slot, 1 x SMBus, 2 x PS2/ KB & MS, 2 x Antenna hole
1 x 16 bit GPIO	1 x 12 bit GPIO
Intel® HD Graphics 4600 (i7-4700EQ, i5-4422E, i3-4110E)	Intel® Valleyview SoC integrated Graphics
VGA: Max. Resolution 1920 x 1200 @ 60Hz HDMI: Max. Resolution 3840 x 2160 @ 24Hz DP: Max. Resolution 1920 x 1200 @ 60Hz	VGA: Max. resolution 2560 x 1080 @ 60Hz
Mic-In, Line-In and Line-Out	Mic-In, Line-In and Line-Out
1 x Intel® 217LM 1 x Intel® 82574L	1 x Intel® I211AT
2 x RJ-45	1 x RJ-45
Power Input: Typical 12/24 Vdc (+12~26V) Factory Option +18Vdc~+75Vdc DC/DC Wide Range Power Module	+12V ~ +26V TVS component for surge protection Reverse current/voltage protection
9.84" x 10.63" x 4.45" (250mm x 270mm x 113mm)	8.66" x 8.46" x 5.79" (220mm x 215mm x 147mm)
(w/SSD), ambient w/ air flow; i7 -10°C ~ 50°C (14°F ~ 122°F) (w/SSD), ambient w/ air flow; i5/i3 -10°C ~ 60°C (14°F ~ 140°F)	(w/SSD, mSATA), ambient w/ air flow -15°C ~ 60°C (5°F ~ 140°F)
CE, FCC Class A	CE, FCC Class B



Fanless & Easy Maintenance

• No Cable No Trouble

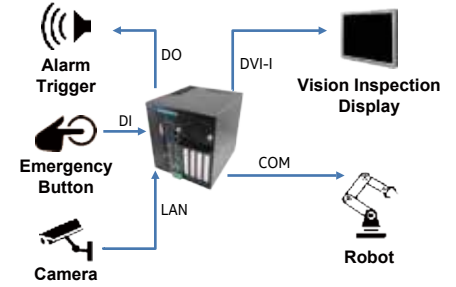
• Easy To Install Any Device



Expansion - Avalue IET Module



Basic Application



Expandable Fanless System

Model Number	SLP-SKL	SLP-SKLB	SLP-SKLG	SLP-SKI
Processor	Intel® Core™ i7-6700TE Processor (4-Core, 2.4GHz) Intel® Core™ i5-6500TE Processor (4-Core, 2.3GHz) Intel® Core™ i3-6100TE Processor (2-Core, 2.7GHz)		Intel® Celeron® Processor 3955U (2-Core, 2.0GHz)	
System Chipset	Intel® Q170 Chipset		N/A	
System Memory	2 x 260-Pin DDR4 2133MHz SO-DIMM up to 32 GB (Default: 1 x 4GB DDR4)		2 x 260-Pin DDR4 2133MHz SO-DIMM up to 32 GB (Default: 1 x 4GB DDR4)	
Expansion	1 x PCI-e x16 3 x PCI	1 x PCI-e x8 2 x PCI-e x4 1 x PCI	3 Slot : 2 x PCI, 1 x PCIe-1 2 Slot : 1 x PCI, 1 x PCIe-1 1 Slot : 1 x PCIe-4 1 x Key A M.2 2230	1 x Key A M.2 2230
Storage	1 x Mini PCI-e Supports mSATA 2 x 2.5" Drive Bay support RAID 0, 1 1 x CFast™		1 x 2.5" Drive Bay	
USB	6 x USB 3.0		4 x USB 3.0	4 x USB 3.0 2 x USB 2.0
COM Port	2 x RS-232 2 x RS-232/422/485		4 x RS232	4 x RS232
Other	1 x Power on/off switch with LED 1 x Reset button 1 x HDD LED, 1 x CFast LED 1 x Internal USB 2.0 (Type-A) 1 x PS/2 Keyboard 1 x PS/2 Mouse 1 x 16CH isolated DIO		1 x Power on/off switch with LED 1 x Reset button 1 x HDD LED, 1 1 x Internal USB 2.0 (Type-A) 1 x PS/2 Keyboard / Mouse	1 x Power on/off switch with LED 1 x Reset button 1 x HDD LED, 1 1 x Internal USB 2.0 (Type-A) 1 x PS/2 Keyboard / Mouse 1 x 16CH isolated DIO
Display	DP + DVI-I		HDMI + VGA	
Audio	Mic-In, Line-In and Line-Out		Mic-In and Line-Out	
Ethernet	1 x Intel® I219LM, 1 x Intel® I210AT		1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 3 x Intel® I211AT
Power Connector	Phoenix Connector		Phoenix Connector Mini Din connector	
Power Requirement	Built-in 9-36 VDC wide-range DC input		+12-24 VDC input	
Power Mode	ATX		ATX / AT	
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 180W Adapter (24V @ 7.5A)		Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 180W Adapter (24V @ 7.5A)	
Operating Temperature	(w/Industrial SSD, CFast), ambient w/ air flow 0°C ~ 50°C (32°F ~ 122°F) (w/HDD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)		-5°C ~ 45°C (23°F ~ 113°F) w/HDD, ambient w/ air flow -5°C ~ 55°C (23°F ~ 131°F) w/Industrial SSD/RAM, ambient w/ air flow	
Storage Temperature	40°C ~ 75°C (-40°F ~ 167°F)		40°C ~ 75°C (-40°F ~ 167°F)	
Construction	Aluminum + Metal		Aluminum + Metal	
Mounting Kit	Wall Mount VESA (Optional)		N/A	
Dimension (L x W x H)	200 x 225 x 218 mm		221.8 x 135 x 232.85 mm	217.8 x 220 x 92 mm
Weight	4.5 kg		3.6 kg	3.2 kg



Fanless Embedded System



Fanless Embedded System				
Model Number	EPS-CFS	EPS-CFS2	EPS-KBLHE	ERS-BYT
Board	ECM-CFS	ECM-CFS	ECM-KBLH	ECM-BYT + AUX-032
Processor	i7-8700T, i7-9700TE, i5-8500T, i5-9500TE, i3-8100T, i3-9100TE, G5400T, G4900T	i7-8700T, i7-9700TE, i5-8500T, i5-9500TE, i3-8100T, i3-9100TE, G5400T, G4900T	i7-7820EQ, i5-7440EQ, i3-7100E	J1900
System Chipset	Intel® Q370 Express Chipset Intel® H310 Express Chipset	Intel® Q370 Express Chipset Intel® H310 Express Chipset	Intel® QM175 Express Chipset	
System Memory	1 x 260-Pin DDR4 2400/2666MHz SO-DIMM up to 32 GB	1 x 260-Pin DDR4 2400/2666MHz SO-DIMM up to 32 GB	1 x 260-Pin DDR4 2400MHz SO-DIMM up to 16 GB	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB
Expansion	1 x mPCIe (default) (Q370 - PCIe/SATA/USB 2.0) (H310 - SATA/USB 2.0) 1 x mPCIe, support USB 2.0 (factory option)	1 x mPCIe (default) (Q370 - PCIe/SATA/USB 2.0) (H310 - SATA/USB 2.0)	1 x mPCIe Supports mSATA 1 x M.2 (B-Key, 2242)	1 x Mini PCIe
Storage	2 x 2.5" Drive Bay 1 x mSATA	2 x 2.5" Drive Bay 1 x mSATA	2 x 2.5" Drive Bay 1 x M.2 (B-Key, 2242) 1 x mSATA	1 x CompactFlash Type I/II Socket 1 x mSATA, 1 x 2.5" Drive Bay
USB	2 x USB 2.0, 4 x USB 3.1	2 x USB 2.0, 4 x USB 3.1	2 x USB 2.0, 4 x USB 3.0	3 x USB 2.0, 1 x USB 3.0
COM Port	2 x RS-232	2 x RS-232	1 x RS-232 1 x RS-232/422/485	3 x RS-232, 1 x RS-232/422/485 (BIOS)
Display Chipset	Intel® UHD Graphics 630/610	Intel® UHD Graphics 630/610	Intel® HD Graphics 630	Intel® HD Graphics for Intel® Atom® Processor Z3700 Series
Display Resolution	HDMI: Max. resolution 4096 x 2304 @ 30Hz	HDMI: Max. resolution 4096 x 2304 @ 30Hz	HDMI: Max. resolution 4096 x 2160 @ 24Hz	VGA: Max. resolution 2560 x 1080 @ 60Hz HDMI: Max. resolution 1920 x 1200 @ 60Hz
Audio Chipset	Realtek ALC892	Realtek ALC892	Realtek ALC233 supports 2.1-CH	Realtek ALC892 supports 5.1-CH
Audio Interface	Mic-In and Line-Out	Mic-In and Line-Out	Mic-In and Line-Out	Mic-In, Line-In and Line-Out
Ethernet Chipset	1 x Intel® I211AT 1 x Intel® I219LM	1 x Intel® I211AT 1 x Intel® I219LM	1 x Intel® I210AT 1 x Intel® I219LM	2 x Intel® I211AT
Ethernet Interface	2 x RJ45	2 x RJ45	2 x RJ45	2 x RJ45
Power Connector	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
Power Requirement	+12V	+12V	+12V +9V ~ +36V (optional with EPM-1712)	+12V ~ +26V
ACPI	Single Power ATX Support S0, S1, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S1, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5; ACPI 3.0 Compliant
Power Mode	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)
Dimension (L x W x H)	8.35" x 9.45" x 3.35" (212mm x 240mm x 85mm)	6.69" x 7.68" x 2.56" (170mm x 195mm x 65mm)	9.45" x 9.02" x 2.60" (240mm x 229mm x 66mm)	10.67" x 5.91" x 2.17" (271mm x 150mm x 55mm)
Operating Temperature	With extended temperature peripherals w/ air flow: -10°C ~ 50°C (14°F ~ 122°F)	With extended temperature peripherals w/ air flow: -10°C ~ 45°C (14°F ~ 113°F)	With extended temperature peripherals w/ air flow: -10°C ~ 50°C (14°F ~ 122°F)	(w/SSD, mSATA, CF), ambient w/ air flow -10°C ~ 60°C (14°F ~ 140°F); (w/HDD), ambient w/ air flow 0°C ~ 45°C (32°F ~ 113°F); For Valleyview I SoC (w/SSD, mSATA), ambient w/ air flow -40°C ~ 75°C (-40°F ~ 167°F)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class A



Fanless Embedded System

Model Number	ECS-APCL	ECS-APCO	ECS-SKLUC	ECS-BYTC
Processor	Intel® Celeron® Processor J3455E	Intel® Celeron® N3350 Processor	Intel® Celeron® Processor 3855U (2M Cache, 1.60 GHz) Intel® Celeron® Processor 3955U (2M Cache, 2.00 GHz)	Intel® Celeron® Processor J1900 (2M Cache, up to 2.42 GHz)
System Memory	1 x 204-pin DDR3L 1600MHz SO-DIMM socket, supports up to 8GB	2 x 204-pin DDR3L 1600/1333MHz SO-DIMM, supports up to 8 GB	1 x 260-pin DDR4 2133MHz SO-DIMM supports up to 16GB	1 x 204-pin DDR3L 1333MHz SO-DIMM up to 8 GB
Expansion	1 x M.2 Type B 3042/2242/2260 supports SSD 1 x M.2 Type A 2230 supports WiFi module	1 x M.2 Type B 3042/2242/2260 supports SSD 1 x M.2 Type A 2230 supports WiFi module	1 x full size Mini PCI-e support mSATA 1 x full size Mini PCI-e support Wi-Fi module and SIM Card	1 x Full-Sized Mini PCI-e supports mSATA 1 x Half-Sized Mini PCI-e
Storage	1 x M.2 Type B 3042/2242/2260 supports SSD	1 x 2.5" HDD/SSD Internal Bracket 1 x M.2 Key B 3042/2242/2260 supports SSD	1 x full size Mini PCI-e support mSATA 1 x full size Mini PCI-e support Wi-Fi module and SIM Card 1 x 2.5" SATA HDD/SSD	1 x full size Mini PCI-e support mSATA 1 x full size Mini PCI-e support Wi-Fi module and SIM Card 1 x 2.5" SATA HDD/SSD
USB	2 x USB 3.0, 2 x USB 2.0	2 x USB 3.0, 4 x USB 2.0	4 x USB 2.0, 2 x USB 3.0	1 x USB 3.0, 5 x USB 2.0
COM Port	1 x RS-232	1 x RS-232	5 x COM (RS-232) 1 x COM (RS-232/RS-485)	5 x RS-232 1 x RS-232/RS-485
Other	1 x Power on/off Button 1 x Storage LED 2 x SMA Connector (Optional)	1 x Power on/off Button w/ LED 1 x Storage LED 2 x SMA Connector (Optional)	1 x Power-on/off Switch 1 x Power LED 1 x HDD LED 1 x Line-out	1 x Power on/off Switch 1 x Power LED 1 x HDD LED 1 x SMA Connector (Optional)
Display	DP++ HDMI	Intel® Celeron® SoC Integrated Graphics DP++ + HDMI	VGA HDMI	VGA + HDMI
Audio	Realtek ALC662 HD Audio Decoding Controller Realtek ALC105 Support 2 x Stereo Class-D 3W Audio Amplifier Line-Out	Realtek ALC662 supports 2-CH Mic-In and Line-Out	Realtek ALC662 HD Audio Decoding Controller Realtek ALC105 Support 2 x Stereo Class-D 3W Audio Amplifier Line-Out	Realtek ALC662 HD Audio Decoding Controller Realtek ALC105 Support 2 x Stereo Class-D 3W Audio Amplifier Line-Out
Ethernet	2 x Intel I211AT	2 x Intel I211AT	2 x Intel I211AT GbE controller	Realtek ALC662 Realtek ALC105
Power Connector	DC Jack (lockable)	DC Jack (lockable)	DC Jack (lockable)	DC Jack (lockable)
Power Requirement	+12V	+12V	+12V	+12V
Power Mode	ATX	ATX	Single power ATX Support S0, S3, S4, S5	ATX
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F) (w/HDD) ambient w/ air flow.	0°C ~ 50°C (32°F ~ 104°F) (w/SSD), ambient w/ air flow. 0°C ~ 40°C (32°F ~ 113°F) (w/HDD, M.2 and OEM chassis), ambient w/ air flow	0°C ~ 40°C (32°F ~ 104°F) (w/HDD), ambient w/ air flow 0°C ~ 45°C (32°F ~ 123°F) (w/SSD, mSATA), ambient w/ air flow	0°C ~ 40°C (32°F ~ 104°F) (w/HDD), ambient w/ air flow 0°C ~ 45°C (32°F ~ 113°F) (w/SSD, mSATA), ambient w/ air flow
Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)	-20°C ~ 75°C (-4°F ~ 167°F)	-20°C ~ 75°C (-22°F ~ 167°F)	-20°C ~ 75°C (-22°F ~ 167°F)
Construction	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal
Mounting Kit	Wall Mount (Optional)	VESA/ Din rail/ Wall Mount (Optional)	VESA / Din rail (optional)	VESA/ Din rail (optional)
Dimension (L x W x H)	120.6 x 95.2 x 49.8 mm	145.5 x 160 x 63 mm	180mm x 126mm x 75.5mm	180 x 126 x 68 mm
Weight	1.2 kg	1.5 kg	1.4 kg	1.2 kg

Fanless Embedded System



Fanless Embedded System

Model Number	EPC-WHL	EPC-SKLU	EPC-APL	EPC-BYT2	EPC-BYT
Board	ECM-WHL	ECM-SKLU	ECM-APL2	ECM-BYT2	ECM-BYT + AUX-032
Processor	8th Generation Intel® Core™ i7/ i5/ i3/ Celeron® Processor	i7-6600U, i5-6300U i3-6100U, Celeron 3955U	N4200 N3350	J1900	J1900
System Memory	2 x SO-DIMM Socket Max. Up to 64GB DDR4 2400	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	1 x 204-Pin DDR3L 1866MHz SO-DIMM up to 8 GB	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB
Expansion	1 x M.2 Key-E includes CNVio Signal (2230) for Wi-Fi Cards 1 x M.2 Key-B with SIM Slot (2242/3042) for LTE & I/O Cards	1 x Full Size Mini PCIe (mSATA) 1 x M.2 (B-KEY, 2242, w/SIM Slot)	1 x Full size Mini PCIe Supports mSATA 1 x Half size Mini PCIe Supports Wi-Fi Module	2 x Mini PCIe	1 x Mini PCIe
Storage	1 x 2.5" Drive Bay (7mm) 1 x M.2 Key-B (2242)	1 x 2.5" Drive Bay (7mm) 1 x M.2 (B-KEY, 2242) 1 x mSATA	1 x mSATA, 1 x 2.5" Drive Bay	1 x mSATA, 1 x 2.5" Drive Bay (7mm HDD Restricted)	1 x CompactFlash Type I/II Socket, 1 x mSATA, 2.5" Drive Bay (7mm HDD Restricted)
USB	4 x USB 3.1	2 x USB 2.0, 4 x USB 3.0	4 x USB 3.0	3 x USB 2.0, 1 x USB 3.0	5 x USB 2.0, 1 x USB 3.0
COM Port	N/A	1 x RS-232 1 x RS-232/422/485 (Cable & BIOS)	1 x RS-232/422/485 (Jumper)	1 x RS-232/422/485	3 x RS-232, 1 x RS-232/422/485
Other	2 x Antenna Mounting with Dust Protection Cove	2 x Antenna Mounting with Dust Protection Cover	2 x Knockouts for Antenna Mounting	2 x Knockouts for Antenna Mounting	1 x Knockouts for Antenna Mounting
Display Chipset	Intel® UHD Graphics 620	Intel® HD Graphics 520/ 510	Intel® HD Graphics 505/500	Intel® HD Graphics for Intel® Atom® Processor Z3700 Series	Intel® HD Graphics for Intel® Atom® Processor Z3700 Series
Resolution	2 x HDMI 1.4: 4096 x 2160 @ 24Hz	2 x HDMI: Max. Resolution 4096 x 2160 @ 24Hz	VGA: Max. resolution 1920 x 1200 @ 60Hz HDMI: Max. resolution 3840 x 2160 @ 30Hz	VGA: Max. resolution 2560 x 1080 @ 60Hz HDMI: Max. resolution 1920 x 1200 @ 60Hz	VGA: Max. resolution 2560 x 1080 @ 60Hz HDMI: Max. resolution 1920 x 1200 @ 60Hz
Audio Chipset	Realtek ALC892	Realtek ALC892	Realtek ALC892 supports 5.1-CH	Realtek ALC892 supports 5.1-CH	Realtek ALC892 supports 5.1-CH
Audio Interface	1 x Line-Out 1 x Mic-In	N/A	Mic-in, Line-in, Line-out (Optional)	N/A	Mic-In, Line-In and Line-Out
Ethernet Chipset	1 x Intel® I211AT 1 x Intel® I219LM	1 x Intel® I211AT 1 x Intel® I219LM	2 x Intel® I211AT	2 x Realtek 8111E	2 x Intel® I211AT
Ethernet Interface	2 x RJ45	2 x RJ45	2 x RJ45	2 x RJ45	2 x RJ45
Power Connector	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
Power Requirement	+12V	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V	+12V ~ +26V
ACPI	Single Power ATX Support S0, S3	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	Single Power ATX Support S0, S3, S4, S5; ACPI 3.0 Compliant
Power Mode	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)
Adapter	Input: 100 ~ 240Vdc/50 ~ 60Hz Output: 120W Adapter (12V @ 10A Adapter) AC-DC Adapter	Input: 100 ~ 240Vdc/50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter) AC-DC Adapter	Input: 100 ~ 240Vdc/50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter) AC-DC Adapter	Input: 100 ~ 240Vdc/50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter) AC-DC Adapter	Input: 100 ~ 240Vdc/50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter) AC-DC Adapter
Construction	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal
Dimension (L x W x H)	6.97" x 4.84" x 2.17" (177mm x 123mm x 55mm)	7" x 4.8" x 2.0" (177mm x 123mm x 50mm)	6.97" x 4.84" x 1.77" (177mm x 123mm x 45mm)	6.88" x 4.33" x 1.57" (175mm x 110mm x 40mm)	7" x 5.6" x 2.0" (178mm x 142mm x 50mm)
Operating Temperature	With extended temp. peripherals w/ air flow: -10°C ~ 40°C (14°F ~ 104°F)	With extended temp. peripherals w/ air flow: -10°C ~ 50°C (14°F ~ 122°F)	With extended temp. peripherals w/ air flow: -10°C ~ 50°C (14°F ~ 122°F)	-10 ~ 45°C (w/mSATA & SSD), Ambient w/Air Flow 0 ~ 40°C (32 ~ 104°F)	(w/SSD, mSATA, CF), ambient w/ air flow 0°C ~ 50°C (32°F ~ 122°F)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class A	CE, FCC Class A



Barebone with IPMI Solution



Barebone System with IPMI Solution		
Model Number	HPS-246UT	HPS-246U4
Processor (CPU Type)	Intel® LGA1151 Socket Supports 8/9th Gen. Intel® Xeon® E/Core™, Pentium®/Celeron® Processors (Max. TDP at 95W)	Intel® LGA1151 Socket Supports 8/9th Gen. Intel® Xeon® E/Core™, Pentium®/Celeron® Processors (Max. TDP at 95W)
Chipset	Intel® C246 Chipset	Intel® C246 Chipset
Memory	4 x 288-pin DDR4 2666MHz DIMM supports up to 128 GB (ECC memory supported by CPU)	4 x 288-pin DDR4 2666MHz DIMM supports up to 128 GB (ECC memory supported by CPU)
Storage	External: 4 x 5.25" and 1 x 3.5" Internal: 5 x 2.5" or 5 x 3.5" (HPM-246 supports up to 4 SATA ports)	External: 3 x 5.25" and 1 x 3.5" Internal: 4 x 2.5" and 1 x 2.5" (HPM-246 supports up to 4 SATA ports)
IPMI	IMPI 2.0	IMPI 2.0
Expansion Slots	1 x PCI-E Gen3 x16 slot 1 x PCI-E Gen2 x8 slot 1 x PCI-E Gen3 x4 slot 1 x PCI-E Gen3 x1 slot 1 x PCI 3.0 slot	1 x PCI-E Gen3 x16 slot 1 x PCI-E Gen2 x8 slot 1 x PCI-E Gen3 x4 slot 1 x PCI-E Gen3 x1 slot 1 x PCI 3.0 slot
LAN	7 x RJ45 Gigabit Ethernet ports, IPMI shared LAN1 port	7 x RJ45 Gigabit Ethernet ports, IPMI shared LAN1 port
USB	Rear: 2 x USB 3.2 Gen1 Internal: 6 x USB 3.2 Gen1	Rear: 2 x USB 3.2 Gen1 Internal: 6 x USB 3.2 Gen1
Display	Intel® 8/9th Gen. CPU Integrated 3 x DP++	Intel® 8/9th Gen. CPU Integrated 3 x DP++
Display Resolution	DP: 4096 x 2304 @ 60Hz HDMI : 4096 x 2160 @ 30Hz	DP: 4096 x 2304 @ 60Hz HDMI : 4096 x 2160 @ 30Hz
Audio	Realtek ALC892 Mic-in, Line-in, Line-out	Realtek ALC892 Mic-in, Line-in, Line-out
Cooling Fan	80 x 25mm Front Fan x 2	80 x 25mm Front Fan x 2
Power Supply	700W (80 Plus)	700W (80 Plus)
Power Mode	ATX	ATX
Operating Temperature	5°C ~ 45°C (41°F ~ 113°F)	5°C ~ 45°C (41°F ~ 113°F)
Dimension (L x W x H)	588 x 200 x 430 mm (23.14" x 7.9" x 16.9")	525 x 482.6 x 178 mm (20.7" x 19" x 7")
Form Factor	Tower	4U Rackmount
OS	Windows 10 IoT Enterprise 64-bit Windows Server 2016 Windows Server 2019 Ubuntu 18.04	Windows 10 IoT Enterprise 64-bit Windows Server 2016 Windows Server 2019 Ubuntu 18.04

Mainboard with IPMI Solution	
Model Number	HPM-246
Processor	Intel® LGA1151 Socket Supports 8/9th Gen. Intel® Xeon®(Workstation)/Core™, Pentium®/Celeron® Processors (Max. TDP at 95W)
System Chipset	Intel® C246 Chipset
System Memory	4 x 288-pin DDR4 2666MHz DIMM supports up to 128 GB (ECC memory supported by CPU)
Expansion	1 x PCI-E Gen3 x16 slot 1 x PCI-E Gen2 x8 slot 1 x PCI-E Gen3 x4 slot 1 x PCI-E Gen3 x1 slot 1 x PCI 3.0 slot
Display	Intel® 8/9th Gen. CPU Integrated 3 x DP++
Resolution	DP: 4096 x 2304 @ 60Hz HDMI : 4096 x 2160 @ 30Hz
Audio	Realtek ALC892 Mic-in, Line-in, Line-out
Ethernet	7 x Intel® I210AT
USB/SATA/COM/LAN	8/4/2/7
Power Requirement	1 x Std. 24 pin ATX Connector 1 x 8 Pin SSI 12V Connector
Power Type	ATX
IPMI	IPMI 2.0
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	12" x 9.6" (304.8 mm x 243.84 mm)
Weight	1.54 lbs (0.7 kg)



Wide Temperature System



Wide Temperature System

Model Number	BMX-T521-BSW	BMX-T521-BYT	BMX-T522-SK
Processor	Intel® Celeron® Processor N3160 (2M Cache, up to 2.24 GHz)	Intel® Celeron® Processor J1900 (2M Cache, up to 2.42 GHz)	Intel® 6th Gen Core™ SoC i7/i5/i3 & Celeron® BGA Processor
System Chipset	N/A	N/A	N/A
System Memory	2 x 204-pin DDR3L 1600MHz SO-DIMM up to 8 GB (Default: 1 x 2GB DDR3L)	2 x 204-pin DDR3L 1333MHz SO-DIMM up to 8 GB (Default: 1 x 2GB DDR3L)	2 x 260-pin DDR4 2133MHz SO-DIMM up to 32GB (Default: 1 x 4GB DDR4)
Expansion	1 x Full Size Mini PCI-e support mSATA Only 1 x Full Size Mini PCI-e support WiFi & 3G/4G module	1 x Full Size Mini PCI-e support mSATA Only 1 x Full Size Mini PCI-e support WiFi & 3G/4G module	1 x M.2 Key B 3042/2242/2260/2280 w/ SIM card slot 1 x M.2 Key A 2230 Supports WiFi Module
Storage	1 x SD card slot support SD/ SDHC Card 2 x 2.5" Drive Bay	1 x SD card slot support SD/ SDHC Card 2 x 2.5" Drive Bay	1 x SD card slot support SD/ SDHC Card 2 x 2.5" Internal HDD Bracket
USB	4 x USB 2.0, 4 x USB 3.0	2 x USB 2.0, 4 x USB 3.0	4 x USB 3.0, 4 x USB 2.0
COM Port	5 x RS232 (pin9 with power) 1 x RS232/422/485	5 x RS232 (pin9 with power) 1 x RS232/422/485	4 x RS-232 (pin9 with power) 2 x RS-232/422/485
Other	1 x PS/2 Keyboard or Mouse	1 x SIM Card Slot 2 x SMA Connector (Optional)	1 x SIM Card Slot 2 x SMA Connector (Optional)
Display	Intel® Atom™/ Celeron® SoC Integrated Graphics VGA + HDMI	Intel® Atom™/ Celeron® SoC Integrated Graphics VGA + HDMI	Intel® 6th Gen Core™ SoC i7/i5/i3 & Celeron® BGA Processor DP + DP, DP + HDMI
Display Resolution	VGA: 2560 x 1600 @ 60Hz HDMI: 3840 x 2160 @ 30Hz	VGA: 2560 x 1600 @ 60 Hz HDMI: 1920 x 1200 @ 60Hz	HDMI: 3840 x 2160 @ 30 Hz, 2560 x 1600 @ 30 Hz DP: 4096 x 2160 @ 60Hz
Audio	Realtek ALC662 supports 2-CH Mic-In and Line-Out	Realtek ALC662 supports 2-CH Mic-In and Line-Out	Realtek ALC892 Audio Codec Mic-In and Line-Out
Ethernet	2 x Intel® I211AT	2 x Intel® I211AT	1 x Intel® i211AT 1 x Intel® i219LM
Power Connector	DC Jack (lockable)	DC Jack (lockable)	DC Jack (lockable)
Power Requirement	+12V	+12V	+12V~24V
Power Mode	ATX	ATX	ATX
Adapter/Power Supply	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)
Operating Temperature	(w/SSD, mSATA), ambient w/ air flow 0°C ~ 50°C (32°F ~ 122°F) (w/HDD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)	(w/SSD, mSATA), ambient w/ air flow 0°C ~ 50°C (32°F ~ 122°F) (w/HDD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F) (w/HDD), ambient w/ air flow 0°C ~ 55°C (32°F ~ 131°F) (w/ Wide-temp SSD & M.2 only), ambient w/ air flow
Storage Temperature	-40°C ~ 75°C (-40°F ~ 167°F)	-40°C ~ 75°C (-40°F ~ 167°F)	-40°C ~ 75°C (-40°F ~ 167°F)
Construction	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal
Mounting Kit	VESA/ Din rail/ Wall Mount (Optional)	VESA/ Din rail/ Wall Mount (Optional)	VESA/ Din rail/ Wall Mount (Optional)
Dimension (L x W x H)	180 x 182 x 76 mm	180 x 182 x 76 mm	180 x 182 x 76 mm



Barebone System



Barebone System

Model Number	BMX-P521-H110	BMX-P521-Q170	BMX-T524-Q170	BMX-T524-H110
Processor	Intel® LGA1151 Socket Supports 6th Generation Core™ Refresh i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 85W)	Intel® LGA1151 Socket Supports 6th Generation Core™ Refresh i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 85W)	Intel® LGA1151 Socket Supports 6th Generation Core™ Refresh i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 65W)	Intel® LGA1151 Socket Supports 6th Generation Core™ Refresh i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 65W)
System Chipset	Intel® H110 Chipset	Intel® Q170 Chipset	Intel® Q170 Chipset	Intel® H110 Chipset
System Memory	2 x 260-pin DDR4 2133MHz SO-DIMM Supports up to 32GB	2 x 260-pin DDR4 2133MHz SO-DIMM Supports up to 32GB	2 x 260-pin DDR4 2133MHz SO-DIMM Supports up to 32GB	2 x 260-pin DDR4 2133MHz SO-DIMM Supports up to 32GB
Expansion	1 x PCI-e 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
Storage	1 x 2.5" or 1 x 3.5" (up to 24.5mm) HDD/SSD Bracket 1 x 3.5" (up to 20.0mm) HDD Bracket 1 x 5.25" External Drive Bay	1 x 2.5" or 1 x 3.5" (up to 24.5mm) HDD/SSD Bracket 1 x 3.5" (up to 20.0mm) HDD Bracket 1 x 5.25" External Drive Bay	2 x 2.5" or 1 x 3.5" HDD Bracket	2 x 2.5" or 1 x 3.5" HDD Bracket
USB	4 x USB 2.0, 4 x USB 3.0	6 x USB 2.0, 4 x USB 3.0	4 x USB 2.0, 4 x USB 3.0	4 x USB 2.0, 4 x USB 3.0
COM Port	5 x RS-232, 1 x RS-232/422/485	5 x RS-232, 1 x RS-232/422/485	4 x RS232 (pin9 with power) 1 x RS232/422/485	4 x RS232 (pin9 with power) 1 x RS232/422/485
Other	1 x SMA Connector (Optional) 1 x PS/2 Keyboard & Mouse Combo Jack	1 x SMA Connector (Optional) 1 x PS/2 Keyboard & Mouse Combo Jack	2 x SMA Connector (Optional) 1 x PS/2 Keyboard & Mouse Combo Jack	2 x SMA Connector (Optional) 1 x PS/2 Keyboard & Mouse Combo Jack
Display	HDMI + VGA (or DP) Dual Display	VGA, HDMI, DP Triple display	VGA, HDMI, DP Triple display	HDMI + VGA (or DP) Dual Display
Display Resolution	VGA: 2560 x 1600 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz	VGA: 2560 x 1600 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz	VGA: 2560 x 1600 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz	VGA: 2560 x 1600 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz
Audio	Realtek ALC892 HD Audio Decoding Controller with 6W Amplifier Front: Mic-In, Line-In, Line-Out Rear: Mic-In, Line-Out	Realtek ALC892 HD Audio Decoding Controller with 6W Amplifier Front: Mic-In, Line-In, Line-Out Rear: Mic-In, Line-Out	Realtek ALC892 HD Audio Decoding Controller with 6W Amplifier	Realtek ALC892 HD Audio Decoding Controller with 6W Amplifier
Ethernet	1 x Intel® I219-LM 1 x Intel® I211-AT	1 x Intel® I219-LM 1 x Intel® I211-AT	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT
Power Connector	AC Jack (IEC 320 C14)	AC Jack (IEC 320 C14)	Power Din Jack	Power Din Jack
Power Requirement	100 ~ 240 VAC	100 ~ 240 VAC	DC in 18~28V via power converter	DC in 18~28V via power converter
Power Mode	ATX	ATX	ATX	ATX
Adapter/Power Supply	Standard TFX 300W Power Supply	Standard TFX 300W Power Supply	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 120W Adapter (19V @ 6.3A)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 120W Adapter (19V @ 6.3A)
Operating Temperature	(w/HDD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)	(w/HDD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)	(w/HDD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)	(w/HDD), ambient w/ air flow 0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	-20°C ~ 70°C (-4°F ~ 158°F)	-20°C ~ 70°C (-4°F ~ 158°F)	-40°C ~ 75°C (-40°F ~ 167°F)	-40°C ~ 75°C (-40°F ~ 167°F)
Construction	Metal	Metal	Aluminum + Metal	Aluminum + Metal
Mounting Kit	N/A	N/A	VESA/ Din rail/ Wall Mount (Optional)	VESA/ Din rail/ Wall Mount (Optional)
Dimension (L x W x H)	265 x 100 x 310 mm	265 x 100 x 310 mm	205 x 205 x 75 mm	205 x 205 x 75 mm



Rackmount System



Rackmount System				
Model Number	BAX-R1U0-H11K	BAX-R1U0-Q17K	BAX-R2U0-Q17K	BAX-R4U0-Q17K
Processor	Intel® 6/7th Generation Core™ i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 35W)	Intel® 6/7th Generation Core™ i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 35W)	Intel® 6/7th Generation Core™ i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 95W)	Intel® 6/7th Generation Core™ i7/i5/i3, Pentium® and Celeron® Processors (Max. TDP at 95W)
System Memory	2 x 288-pin DDR4 2133MHz DIMM up to 32 GB	4 x 288-pin DDR4 2133MHz DIMM up to 64 GB	4 x 288-pin DDR4 2133MHz DIMM up to 64 GB	4 x 288-pin DDR4 2133MHz DIMM up to 64 GB
Storage	2 x 3.5" Drive Bay or 1 x 2.5" + 1 x 3.5" Drive Bay	2 x 3.5" Drive Bay or 1 x 2.5" + 1 x 3.5" Drive Bay	6 x 3.5" Drive Bay or 2 x 5.25" + 4 x 3.5" Drive Bay	3 x 3.5" Internal Drive Bay 2 x 3.5" + 3 x 5.25" External Drive Bay
Expansion	Full Height PCI-e Slot x 1 (via riser card and bracket)	Full Height PCI-e Slot x 1 (via riser card and bracket)	7 x Low profile expansion slots	7 x Full Height expansion slots
Display	Intel® 7th Generation CPU integrated HDMI + VGA, HDMI + DP, VGA + DP	Intel® 7th Generation CPU integrated VGA + HDMI + DP	Intel® 7th Generation CPU integrated VGA + HDMI + DP	Intel® 7th Generation CPU integrated VGA + HDMI + DP
Audio	Realtek ALC892 Mic-In, Line-In and Line-Out 2 x 6W Amplifier	Realtek ALC892 Mic-In, Line-In and Line-Out 2 x 6W Amplifier	Realtek ALC892 Mic-In, Line-In and Line-Out 2 x 6W Amplifier	Realtek ALC892 Mic-In, Line-In and Line-Out 2 x 6W Amplifier
Ethernet	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT
USB	4 x USB 3.0 2 x USB 2.0	4 x USB 3.0 2 x USB 2.0	4 x USB 3.0 2 x USB 2.0	4 x USB 3.0 2 x USB 2.0
COM Port	1 x RS-232	1 x RS-232	1 x RS-232	1 x RS-232
Others	1 x PS/2 Keyboard or Mouse	1 x PS/2 Keyboard or Mouse	1 x PS/2 Keyboard or Mouse	1 x PS/2 Keyboard or Mouse
Power Type	ATX	ATX	ATX	ATX
Operating Temperature	0°C ~ 35°C (32°F ~ 95°F)	0°C ~ 35°C (32°F ~ 95°F)	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)
Power Supply	315W 1U Flex 100-240Vac	315W 1U Flex 100-240Vac	500W PS2 100-240Vac	500W PS2 100-240Vac
Dimensions (L x W x H) w/o Front Panel	381 x 482.6 x 44.4 mm	381 x 482.6 x 44.4 mm	504 x 482.6 x 88.9 mm	508 x 482.6 x 178 mm

INDUSTRIAL SYSTEM OVERVIEW

1U Chassis



- Supporting up to ATX motherboard.
- Designing for Digital Signage, Slim workstation Application.
- Space saving.

2U Chassis



- Supporting micro-ATX or ATX motherboard.
- Industrial control, Automation, Networking Security, Telecom, Application Server
- Flexible for additional slot expansion.



ARM-based System



Rackmount System	
BAX-R1U4S-Q17K	BAX-R2U8S-Q17K
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)
4 x 288-pin DDR4 2133MHz DIMM up to 64GB	4 x 288-pin DDR4 2133MHz DIMM up to 64GB
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
Full Height PCI-e Slot x 1 (via riser card and bracket)	7 x Low profile expansion slots
Intel® 7th Generation CPU integrated HDMI + VGA + DP	Intel® 7th Generation CPU integrated HDMI + VGA + DP
Realtek ALC892 Mic-In, Line-In and Line-Out 2 x 6W Amplifier	Realtek ALC892 Mic-In, Line-In and Line-Out 2 x 6W Amplifier
1 x Intel® I219LM 1 x Intel® I211AT	1 x Intel® I219LM 1 x Intel® I211AT
4 x USB 3.0 2 x USB 2.0	4 x USB 3.0 2 x USB 2.0
1 x RS-232	1 x RS-232
1 x PS/2 Keyboard or Mouse	1 x PS/2 Keyboard or Mouse
ATX	ATX
0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)
315W 1U Flex 100-240Vac	500W 1U Single 100-240Vac
533.4 x 482.6 x 44.4 mm	571.5 x 482.6 x 88.9 mm

ARM-based System		
Model Number	AIB-IMX6	AIB-TX201
Processor	NXP i.MX6 Cortex-A9 Dual Lite/Quad 1GHz CPU	NVIDIA® JETSON™ TX2 CPU : HMP Dual Denver 2/2 MB L2 + Quad ARM® A57/2 MB L2 GPU : NVIDIA® Pascal™, 256 CUDA cores
System Memory	1 X Onboard DDR3 1GB	8GB 128 bit LPDDR4 @ 1866MHz onboard (on NVIDIA® JETSON™ TX2)
Storage	1 x On board 4GB eMMC	32GB eMMC onboard (on NVIDIA® JETSON™ TX2)
External I/O Connector	1 x USB2.0 Type A(Double deck), 1 x HDMI, 1 x 10/100/1000 LAN RJ45, Optional Powered LAN support (IEEE 802.3at), 1 x Micro SD socket	1 x Micro USB port for USB OTG 2 x USB 3.0 type A 2 x 1 x 10/100/1000 LAN RJ45 1 x RS232/485 DB9 1 x HDMI
Power Requirement	12 ~ 26V DC input, 2.5mm DC Jack, typical 19V input With brownout detection or Powered LAN (optional)	12V DC input
Operating Temperature	-20°C ~ 70°C (-4°F ~ 158°F)	-20°C ~ 60°C (-4°F ~ 140°F)
Storage Temperature	-40°C ~ 70°C (-40°F ~ 158°F)	-40°C ~ 75°C (-40°F ~ 167°F)
Dimension (L x W x H)	153 mm x 107.8 mm x 30 mm	113 mm x 160 mm x 60.5 mm
Weight	1.5 kg	1.19 kg
Certification	CE, FCC Class B	CE, FCC Class B
Software Support	Android 4.4 or 6.0 Ubuntu 12.04 Yocto 2.1	Ubuntu 16.04

4U Chassis



- Supporting micro-ATX or ATX motherboard.
- Work Station, DVR/Surveillance, Application Server Application.
- Highly Expandable Function for different application.

Mini-Server



- Supporting mini-ITX motherboard.
- Digital Signage, Thin Client, Car PC, Gaming Application
- Space saving with flexible chassis design.
- Optional Smart Power & Eco UPS

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
System Memory	Based on Processor
Storage	N/A
LPWAN Module	Quectel BC95GJB-02-STD
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 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 148mm
Weight	w/o Battery : 0.23KG w/ Battery : 0.33 KG
Certification	TELEC (Based on BC95-G) PSE (Based on Battery)
Software Support	N/A



Light Industrial Panel PC

(Front)

(Rear)



Light Industrial Panel PC - Venus Series

Model Number	VNS-10W01	VNS-15W01
LCD Size	10.1"	15.6"
Display Type	WXGA	Full HD
Resolution	1280 x 800	1920 x 1080
Pixel Pitch	0.1695 (H) x 0.1695 (V) mm	0.17925 (H) x 0.17925 (V) mm
Luminance	350 cd/m ²	220 cd/m ²
Contrast Ratio	800	500
Viewing Angle	85 (U), 85 (D), 85 (L), 85 (R)	20 (U), 45 (D), 45 (L), 45 (R)
Response Time	30ms	8ms
Backlight	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive
Touch Light Transmission	86%	86%
Touch Controller	I ² C interface	USB interface
SBC	DNA 50	DNA 30
Processor	Intel® Atom™ x5-Z8350: 2M Cache, up to 1.92 GHz	
System Chipset	Intel® Atom™	
System Memory	2GB DDR3L RAM / option: 4GB for win 10 & Ubuntu 19.04	
Storage	32GB eMMC / option: 64GB for win 10 & Ubuntu 19.04	
USB	2 x USB 2.0 Type A	
COM Port	1 x RJ45 for RS232 or RS422 or RS485	
Other	Touch Button for Power/ Brightness/ Volume, 1x 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	

Light Industrial Panel PC - CCD Series

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

Light Industrial Panel PC



Light Industrial Panel PC - APC Series

Model Number	APC-1733	APC-18W9	APC-2132	APC-2334
LCD Size	17.3"	18.5"	21.5"	23.8"
Display Type	Full HD	WXGA	Full HD	Full HD
Resolution	1920 x 1080	1366 x 768	1920 x 1080	1920 x 1080
Pixel Pitch	0.1989mm (H) x 0.1989mm (V)	0.300mm (H) x 0.300mm (V)	248.25um (H) x 248.25um (V)	274.5um (H) x 274.5um (V)
Luminance	300 cd/m ²	300 cd/m ²	250 cd/m ²	250 cd/m ²
Contrast Ratio	650	1000	5000	1000
Viewing Angle	70 (U), 70 (D), 60 (L), 60 (R)	80 (U), 80 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	6 ms	5 ms	18 ms	14ms
Backlight	LED	LED	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
Touch Light Transmission	80% +/- 3%	91 %	89 %	89 %
Touch Controller	USB touch (EETI)	USB touch (EETI)	USB touch (EETI)	USB touch (EETI)
SBC	EMX-APLP	EBM-BYT	ARC-SKLU	EMX-KBLUP
Processor	Intel® Apollo Lake N4200 Processor	Intel® Celeron® J1900 4-Core 2.0GHz	Intel® Core™ i7/ i5/ i3 / Celeron Processor	Intel® Core™ i7/ i5/ i3 / Celeron Processor
System Chipset	Intel® Pentium® SoC integrated	Intel® Valleyview SoC	Intel® Skylake U SoC integrated	Intel® Kabylake U SoC integrated
I/O Chipset	EC ITE IT8528	EC ITE IT8528E	EC ITE IT8518E	EC ITE IT8518E
System Memory	2 x 204-pin DDR3L 1600 & 1333MHz SO-DIMM supports up to 16GB	1 x 204-Pin DDR3L 1066/1333MHz SO-DIMM up to 8 GB	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	2 x 260-pin DDR4 2133MHz SO-DIMM supports up to 32GB
Expansion	1 x Mini PCIe Supports mSATA	1 x Mini PCIe 1 x Mini PCIe Supports mSATA	1 x Mini PCIe dule	1 x M.2 Type B 3042/2242/2260/2280, 1 x M.2 Type A 2230 support WiFi module
Storage	1 x mSATA	1 x CompactFlash Type I/II Socket 1 x 2.5" Drive Bay	1 x 2.5" Drive Bay 1 x mSATA (by mini PCIe)	1 x 2.5" Drive Bay 1 x M.2 Type B 3042/2242/2260/2280
USB	4 x USB 3.0	1 x USB 2.0, 1 x USB 3.0	4 x USB 3.0, 2 x USB 2.0 (by IET module)	4 x USB 3.0
COM Port	N/A	1 x RS-232/422/485	1 x RS-232/422/485, 1 x RS-232	N/A
Display Chipset	Intel® Pentium® SoC integrated Graphics	Intel® Valleyview SoC integrated Graphics Supports dual display	Intel® Skylake SoC integrated Graphics Supports dual display	Intel® Kabylake SoC integrated Graphics Supports dual display
Audio	Realtek ALC662 supports 2-CH	Realtek ALC892 Support 5.1-CH	Realtek ALC892 supports 5.1-CH	Realtek ALC892 supports 5.1-CH
Audio Interface	Mic-In, Line-In and Line-Out	Line-Out	1 x Line out, 1 x Mic in (by IET module)	1 x Line out, 1 x Mic in
Ethernet	2 x Intel® I211AT Gigabit Ethernet	2 x Intel® I211AT	1 x Intel® I211AT, 1 x Intel® I219LM	1 x Intel® I211AT, 1 x Intel® I219LM
Power Connector	DC Jack, +12V ~ +24V	Lockable DC Jack, +12V ~ +26V	Lockable DC Jack, +12V ~ +26V	Lockable DC Jack, +12V ~ +24V
Power Type	AT / ATX	AT / ATX	AT / ATX	AT / ATX
Adapter	AC/DC Adapter 100~240V 50~60Hz, 12V/5A	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)	Input:100 ~ 240Vac/ 50 ~ 60Hz Output:72W Adapter (19V @ 3.78A Adapter)	Input:100 ~ 240Vac/ 50 ~ 60Hz Output:72W Adapter (19V @ 3.78A Adapter)
Construction (Front, Rear)	White Plastic	Black Coverlens, Black	Plastic-black	Plastic-black
Dimension	505 x 336 x 54.5 mm	443 x 290 x 59 mm	539.6 x 342.6 x 45.5 mm	592 x 382 x 49.5 mm
Weight	4.7 Kgs	4.54 Kgs	6.3 Kgs	7.2 Kgs
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	-20°C ~ 65°C (-4°F ~ 149°F)	-10°C ~ 50°C (14°F ~ 122°F)	-10°C ~ 60°C (14°F ~ 140°F)	-10°C ~ 60°C (14°F ~ 140°F)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B
OS Information	Win 10	Win 7, Win 8, Linux	Win 7, Win 8.1, Win 10, Linux	Win 10, Linux



Light Industrial Panel PC - PPC Series						
Model Number	PPC-1529	PPC-1729	PPC-2129	PPC-1528	PPC-1728	PPC-2128
LCD Size	15", 4:3	17", 4:3	21.5"	15", 4:3	17", 4:3	21.5"
Display Type	XGA	SXGA	Full HD	XGA	SXGA	Full HD
Resolution	1024 x 768	1280 x 1024	1920 x 1080	1024 x 768	1280 x 1024	1920 x 1080
Pixel Pitch	0.297mm (H) x 0.297mm (V)	0.264mm (H) x 0.264mm (V)	0.248mm (H) x 0.248mm (V)	0.297mm (H) x 0.297mm (V)	0.264mm (H) x 0.264mm (V)	0.248mm (H) x 0.248mm (V)
Luminance	250 cd/m ²	350 cd/m ²	250 cd/m ²	250 cd/m ²	350 cd/m ²	250 cd/m ²
Contrast Ratio	700	800	1000	700	800	1000
Viewing Angle	70 (U), 70 (D), 80 (L), 80 (R)	80 (U), 80 (D), 85 (L), 85 (R)	80 (U), 80 (D), 85 (L), 85 (R)	70 (U), 70 (D), 80 (L), 80 (R)	80 (U), 80 (D), 85 (L), 85 (R)	80 (U), 80 (D), 85 (L), 85 (R)
Response Time	16 ms	30 ms	5 ms	16 ms	30 ms	5 ms
Backlight	LED	LED	LED	LED	LED	LED
Touch Type	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive
Touch Light Transmission	80 %	80 %	80 %	80 %	80 %	80 %
Touch Controller	Onboard USB touch (EETI)			Onboard USB touch (EETI)		
SBC	EBM-BYT			EBM-QM87U		
Processor	Intel® Celeron® J1900 4-Core 2.0GHz processor			4th Gen Intel® Core™ i5-4300U, 2-Core, 1.9GHz processor 4th Gen Intel® Core™ i3-4010U, 2-Core, 1.7GHz processor		
System Chipset	Intel® Valleyview SoC			Intel® Lynx Point-LP PCH		
I/O Chipset	EC ITE IT8528E			EC ITE IT8528E		
System Memory	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB			2 x 204-Pin DDR3L 1600MHz SO-DIMM up to 16 GB		
Expansion	1 x Mini PCIe Supports mSATA			1 x Mini PCIe Supports SIM Card 1 x Mini PCIe Supports mSATA		
Storage	1 x CompactFlash Type I/II Socket, 1 x 2.5" Drive Bay			1 x CompactFlash Type I/II Socket, 1 x 2.5" Drive Bay		
USB	1 x USB 3.0, 3 x USB 2.0			2 x USB 3.0, 2 x USB 2.0		
COM Port	1 x RS-232/422/485			1 x RS-232/422/485		
Display Chipset	Intel® Valleyview SoC Integrated Graphics Supports dual display			Intel® Lynx Point Integrated Graphics Supports dual display		
Display Resolution	DP: Max. resolution 2560x1080 @ 60Hz HDMI: Max. resolution 1920x1200 @ 60Hz			HDMI: Max. resolution 4000x2000 @ 25Hz		
Audio	Realtek ALC892 Support 5.1-CH			Realtek ALC892 Support 5.1-CH		
Audio Interface	Line-Out			Line-Out		
Ethernet	2 x Intel® I210IT			1 x Intel® I210AT, 1 x Intel® I218LM		
Power Connector	Lockable DC Jack, +12V ~ +26V			Lockable DC Jack, +12V ~ +26V		
Power Type	AT/ATX (ATX is default setting)			AT/ATX (ATX is default setting)		
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)			Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)		
Construction (Front, Rear)	White Plastic, Gray Plastic			White Plastic, Gray Plastic		
Dimension	351 x 319 x 54 mm	391.5 x 364.5 x 59 mm	542 x 382 x 63 mm	351 x 319 x 54 mm	391.5 x 364.5 x 59 mm	542 X 382 X 63 mm
Weight	4.9 kg	5.9 kg	7.2 kg	4.9 kg	5.9 kg	7.2 kg
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)			0°C ~ 40°C (32°F ~ 104°F)		
Storage Temperature	-10°C ~ 50°C (14°F ~ 122°F)			-10°C ~ 50°C (14°F ~ 122°F)		
Certification	CE, FCC Class B			CE, FCC Class B		
OS Information	Win 7, Win 10, Linux			Win 7, Win 10, Linux		

LIGHT INDUSTRIAL PANEL PC



Benefits of Consumer Products

- Stylish Design
- Affordable Price



Advantage of Industrial Products

- Durability
- Longevity Support



Light Industrial Panel PC - SID Series

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



Light Industrial Panel PC - SID Series

SID-10W03	SID-15W03	SID-21W03	SID-10R1	SID-15R1	SID-21R1
10.1"	15.6"	21.5"	10.1"	15.6"	21.5"
WXGA	Full HD	Full HD	WXGA	Full HD	Full HD
1280 x 800	1920 x 1080	1920 x 1080	1280 x 800	1920 x 1080	1920 x 1080
0.1695 x 0.1695 mm	0.17925 x 0.17925 mm	0.24795 x 0.24795 mm	0.1695 x 0.1695 mm	0.17925 x 0.17925 mm	0.24795 x 0.24795 mm
350 cd/m ²	220 cd/m ²	250 cd/m ²	350 cd/m ²	220 cd/m ²	250 cd/m ²
800	800	3000	800	800	3000
85 (U), 85 (D), 85 (L), 85 (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)	85 (U), 85 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)
30 ms	30ms	30ms	30ms	30ms	30ms
LED	LED	LED	LED	LED	LED
Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
86%	85%	88%	86%	85%	88%
ACP-CHT3	ACP-CHT3	ACP-CHT3	ACP-RK3288	ACP-RK3288	ACP-RK3288
Intel® Atom™ x5-Z8350 1.44GHz			Rockchip RK3288 1.6GHz		
Intel® Atom™ SoC Integrated			Rockchip SoC Integrated		
2GB / 4GB DDR3L Memory on board			2GB DDR3L Memory on board		
32GB / 64GB eMMC on board			16GB eMMC on board		
Intel® Gen8 HD Graphic core			ARM Mali-T764 GPU core		
HDMI up to 1080p@60Hz			HDMI up to 1080p@120Hz		
1 x USB 3.0 (Type A), 1 x USB 2.0 (Type A)			2 x USB 2.0 (Type A)		
1 x RS-232			1 x RS-232		
1 x Line-Out			1 x Line-Out		
1 x Gigabit Ethernet, 10/100/1000 Mbps			1 x Gigabit Ethernet, 10/100/1000 Mbps		
802.11ac/b/g/n Built-in			802.11 b/g/n Built-in		
Bluetooth 5.0 Built-in			Bluetooth 4.0 Built-in		
DC-in jack, 12 ~ 24V DC			DC-in jack, 12 ~ 24V DC	DC-in jack, 12 ~ 24V DC	DC-in jack, 12 ~ 24V DC
AT/ATX (AT is default setting)			AT/ATX (AT is default setting)		
Input: 100 ~ 240 Vac/ 50 ~ 60Hz; Output: 65W Adapter (19V @ 3.42A Adapter)			Input: 100 ~ 240 Vac/ 50 ~ 60Hz; Output: 60W Adapter (12V @ 5A Adapter)		
Metal, Black			Metal, Black		
VESA 75 x 75	VESA 100 x 100	VESA 100 x 100	VESA 75 x 75	VESA 100 x 100	VESA 100 x 100
255.2 x 169.4 x 40.7 mm	391.2 x 239.2 x 48.14 mm	509 x 304.8 x 49.7 mm	255.2 x 169.4 x 40.7 mm	391.2 x 239.2 x 48.1 mm	509 x 304.8 x 49.7 mm
1.3 KG	2.6 KG	5.6 KG	1.3 KG	2.6 KG	5.6 KG
Front IP65			Front IP65		
0°C ~ 40°C (32°F ~ 104°F)			0°C ~ 40°C (32°F ~ 104°F)		
5% ~ 90% Relative Humidity, Non-Condensing			5% ~ 90% Relative Humidity, Non-Condensing		
CE, FCC Class B			CE, FCC Class B		
Win 10 IoT, Linux Ubuntu 19.04			Linux Debian 9, Android 8.1		



Rugged Human Machine Interface

A 5-Wire Resistive Touch

B Projective Capacitive Multi-Touch (Full Flat design)

Front IP-65 &
Rear IP41 Waterproof



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

Swappable HDD

Memory
Service
Window

Available
Expansion
Boards



Rugged Human Machine Interface - ARC Series

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



Available Expansion Boards



Standard
• Standard w/o Expansion



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



DB-A
• Extra 4 x USB 3.0 Ports



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

DB-D



2 Isolation RS-232

DB-E



12-bit GPIO + 2-bit CAN Bus

DB-F



CAN Bus for OBDII

DB-G



3 x RS-232

DB-H



2 x RS-232 + USB 2.0

DB-K



2 x RS-232 + LAN

Rugged Human Machine Interface - ARC Series

Model Number	ARC-1232	ARC-1532	ARC-1732	ARC-1209	ARC-1509
LCD Size	12.1", 4:3	15", 4:3	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	0.1905mm (H) x 0.1905mm (V)	0.297mm (H) x 0.297mm (V)	0.264 x 0.264	0.1905mm (H) x 0.1905mm (V)	0.297mm (H) x 0.297mm (V)
Luminance	600 cd/m ²	400 cd/m ²	350 cd/m ²	600 cd/m ²	400 cd/m ²
Contrast Ratio	700	700	800	700	700
Viewing Angle	80 (U), 80 (D), 80 (L), 80 (R)	70 (U), 70 (D), 80 (L), 80 (R)	89 (U), 89 (D), 89 (L), 89 (R)	80 (U), 80 (D), 80 (L), 80 (R)	70 (U), 70 (D), 80 (L), 80 (R)
Response Time	16 ms	16 ms	30 ms	16 ms	16 ms
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: EETI External USB controller				
SBC	ARC-SKLU			ARC-BYT	
Processor	6th Gen Intel® Core™ i5-6300U, 2-Core, 2.4GHz processor			A Model: Intel® Atom™ E3845 4-Core 1.91GHz processor B Model: Intel® Celeron® J1900 2.0GHz processor	
I/O Chipset	EC ITE IT8528E				
System Memory	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB			1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB	
Expansion	1 x Mini PCIe Supports mSATA, 1 x Optional 80-pin Expansion			1 x Mini PCIe Supports mSATA, 1 x Optional 80-pin Expansion	
Storage	1 x 2.5" Drive Bay (7mm HDD Restricted)			1 x 2.5" Drive Bay (7mm HDD Restricted)	
USB	4 x USB 3.0			1 x USB 3.0, 3 x USB 2.0	
COM Port	1 x RS-232/422/485, 1 x RS-232			1 x RS-232/422/485, 1 x RS-232	
Other	3 x Knockouts for Antenna Mounting			3 x Knockouts for Antenna Mounting	
Display Chipset	Intel® HD Graphics 520			Intel® Valleyview SoC Integrated 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 ALC892			Realtek ALC892	
Audio Interface	2 x 2W speaker out			2 x 2W speaker out	
Ethernet	1 x Intel® I210AT, 1 x Intel® I219LM			2 x Intel® I210IT	
Power Connector	Lockable DC Jack, +12V ~ +26V			Lockable DC Jack, +12V ~ +26V	
Power Type	AT/ATX (ATX is default setting)			AT/ATX (ATX is default setting)	
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)			Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)	
Construction (Front, Rear)	Aluminum Die Casting			Aluminum Die Casting	
Operating Temperature	-10°C ~ 50°C (14°F ~ 122°F)			(J1900 CPU) -10°C ~ 50°C (14°F ~ 122°F) (E3845 CPU) -20°C ~ 60°C (-4°F ~ 140°F)	
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)			(J1900 CPU) -20°C ~ 60°C (-4°F ~ 140°F) (E3845 CPU) -30°C ~ 70°C (-22°F ~ 158°F)	
Certification	CE, FCC Class B			CE, FCC Class B	
OS Information	Win 7, Win 8.1, Win 10, Linux			Win 7, Win 8, Win 10, Linux	
Dimension	284 x 223 x 46 mm	350 x 274 x 49.8 mm	382 x 320 x 58.8 mm	284 x 223 x 46 mm	350 x 274 x 49.8 mm
Weight	2.4 kg	3.7 kg	4.56 kg	2.4 kg	3.7 kg



Rugged Human Machine Interface



Rugged Human Machine Interface - ARC Wide Series

Model Number	ARC-10W33	ARC-15W33	ARC-21W33	ARC-15W32	ARC-21W34
LCD Size	10.1", 16:10	15.6", 16:9	21.5"	15.6", 16:9	21.5"
Display Type	WXGA	WXGA	Full HD	WXGA	Full HD
Resolution	1280 x 800	1366 x 768	1920 x 1080	1366 x 768	1920 x 1080
Pixel Pitch	0.1695mm x 0.1695mm	0.252mm (H) x 0.252mm (V)	0.248 x 0.248	0.252mm (H) x 0.252mm (V)	0.248 x 0.248
Luminance	350 cd/m ²	300 cd/m ²	250 cd/m ²	300 cd/m ²	250 cd/m ²
Contrast Ratio	800	500	3000	500	3000
Viewing Angle	85 (U), 85 (D), 85 (L), 85 (R)	80 (U), 80 (D), 80 (L), 80 (R)	89 (U), 89 (D), 89 (L), 89 (R)	80 (U), 80 (D), 80 (L), 80 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	25 ms	8 ms	18 ms	8 ms	18ms
Backlight	LED	LED	LED	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
Touch Light Transmission	88%	88%	89%	88%	89%
Touch Controller	USB touch (EETI)	USB touch (EETI)	USB interface, EETI	USB touch (EETI)	USB interface, EETI
SBC	ARC-APL			ARC-SKLU	ARC-KBLU
Processor	Intel® Celeron® Processor N3350 2M Cache, up to 2.4 GHz			6th Gen Intel® Core™ i5-6300U, 2-Core, 2.4GHz processor	7th Gen Intel® Core™ i5-7300U, 2-Core, 2.6GHz processor
I/O Chipset	EC ITE IT8528E			EC ITE IT8528E	
System Memory	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB			1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	
Expansion	1 x Mini PCIe Supports mSATA, 1 x Optional 80-pin Expansion			1 x Mini PCIe Supports mSATA, 1 x Optional 80-pin Expansion	
Storage	1 x 2.5" Drive Bay (7mm HDD Restricted)			1 x 2.5" Drive Bay (7mm HDD Restricted)	
USB	4 x USB 3.0			4 x USB 3.0	
COM Port	1 x RS-232/422/485, 1 x RS-232			1 x RS-232/422/485, 1 x RS-232	
Other	1 x WiFi (Option), 3 x Knockouts for Antenna Mounting			1 x WiFi (Option), 3 x Knockouts for Antenna Mounting	
Display Chipset	Intel® HD Graphics 500			Intel® HD Graphics 520	
Display Resolution	HDMI: Max. resolution 3840 x 2160 @ 30Hz (Optional by IET module)			HDMI: Max. resolution 4096 x 2160 @ 24Hz (Optional by IET module)	
Audio	Realtek ALC892			Realtek ALC892	
Audio Interface	2 x 2W Speaker Out			2 x 2W Speaker Out	
Ethernet	2 x Intel® I211AT			1 x Intel® I210AT 1 x Intel® I219LM	
Power Connector	Lockable DC Jack, +9V ~ +36V			Lockable DC Jack, +12V ~ +26V	
Power Type	AT/ATX (ATX is default setting)			AT/ATX (ATX is default setting)	
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)			Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)	
Construction (Front, Rear)	Metal with cover lens, Black Diet Casting			Metal with cover lens, Black Diet Casting	
Operating Temperature	(N3350/N4200 CPU) -10°C ~ 50°C (14°F ~ 122°F) (E3900 CPU) -20°C ~ 60°C (-4°F ~ 140°F)			-10°C ~ 50°C (14°F ~ 122°F)	
Storage Temperature	(N3350/N4200 CPU) -20°C ~ 60°C (-4°F ~ 140°F) (E3900 CPU) -30°C ~ 70°C (-22°F ~ 158°F)			-20°C ~ 60°C (-4°F ~ 140°F)	
Certification	CE, FCC Class B			CE, FCC Class B	
OS Information	Win 10, Linux			Win 7, Win 8.1, Win 10, Linux	
Dimension	253.3 x 176.4 x 46 mm	385.3 x 240.3 x 49.8 mm	537.9 x 329.4 x 55.9 mm	385.3 x 240.3 x 49.8 mm	537.9 x 329.4 x 55.9 mm
Weight	2 kg	4 kg	7.3 kg	4 kg	7.3 kg



Rugged Human Machine Interface - FPC Series

Model Number	FPC-08W29	FPC-1536	FPC-1736	FPC-21W36
LCD Size	8"	15"	17"	21.5"
Display Type	WSVGA	XGA	XGA	FHD
Resolution	1024 x 600	1024 x 768	1280 x 1024	1920 x 1080
Pixel Pitch	0.1725mm (W) x 0.1656mm (H)	0.297 x 0.297	0.264 x 0.264	0.248 x 0.248
Luminance	500 cd/m ²	400 cd/m ²	350 cd/m ²	250 cd/m ²
Contrast Ratio	700	700	800	3000
Viewing Angle	70 (U), 75 (D), 75 (L), 75 (R)	70 (U), 70 (D), 80 (L), 80 (R)	80 (U), 80 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	20 ms	16 ms	30ms	18ms
Backlight	LED		LED	
Touch Type	5-Wire Resistive		Projective Capacitive Multi-Touch	
Touch Light Transmission	80 %		88%	
Touch Controller	Onboard USB touch (PenMount)		USB interface, EETI	
SBC	ECM-BYT		EMX-H310	
Processor	Intel® Atom™ E3845 4-Core 1.91GHz processor	8th /8th refresh Generation Core™ Pentium® / Celeron /i7/ i5/ i3 Processors		
System Chipset	Intel® Valleyview SoC	Intel® H310 chipset		
I/O Chipset	Nuvoton W83627DHG-P	Nuvoton® NCT6106D		
System Memory	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB	2 x 260-pin DDR4 2400/2666MHz SO-DIMM socket, supports up to 32GB Max		
Expansion	1 x Mini PCIe Supports mSATA	1 x Full size PCI-e x16 (option for 1 x PCI slot) 1 x M.2 Key M Slot support PCI-e x 4 SSD 1 x M.2 2230 Key E Slot support WiFi module 1 x M.2 3042 Key B slot support WWAN+GNSS with SIM card slot		
Storage	1 x CompactFlash Type I/II Socket (CF-SATA optional)	2 x 2.5" Drive Bay (7mm HDD Restricted) (Support RAID 0,1)		
I/O	3 x USB 2.0, 1 x USB 3.0 1 x RS-232/422/485, 1 x RS-232	3 x USB 3.1 at I/O, USB Type C without DP Signal 1 x RS-232/422/485, 1 x RS-232		
Display Chipset	Intel® Valleyview SoC Integrated Graphics Supports dual display	Depend on Processor graphics		
Display Resolution	VGA: Max. resolution 2560x1080 @ 60Hz HDMI: Max. resolution 1920x1200 @ 60Hz	3 x HDMI 1.4b: 3840 x 2160 @ 30 Hz, 2560 x 1600@ 30 Hz		
Audio	Realtek ALC892 Support 5.1-CH Mic-In and Line-Out	Realtek ALC892 HD codec 2 x 2W Speaker Out, Line out, Mic in		
Ethernet	2 x Intel® I211AT	2 x Intel® I210IT, 1 x Intel® I219LM		
Power Type	AT/ATX (ATX is default setting) Lockable DC Jack, +12V ~ +26V (12V @ 5A Adapter)	AT/ATX (ATX is default setting) Lock DC Jack, 2 pin Phoenix connector		
Construction (Front, Rear)	Metal, Aluminum + Metal	Aluminum Die Casting + Metal		
Dimension	225 x 129 x 43.4 mm	350.5 x 274.5 x 87.5 mm	382 x 320.4 x 87.5 mm	537.9.1 x 329.4 x 87.5 mm
Weight	1.27 Kg	4.5 kg	6.5 kg	8 kg
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	-10 ~ +50°C CPU TDP <= 35W (fanless design), CPU TDP => 65W (with cooler fan)		
Storage Temperature	-10°C ~ 50°C (14°F ~ 122°F)	-20°C ~ 60°C (-4°F ~ 140°F)		
Certification	CE, FCC Class B	CE, FCC Class B		
OS Information	Win 8, Win 7, Linux	Linux, Windows 10		

STAINLESS STEEL PANEL PC



(Front)



(Rear)

INDUSTRIAL TOUCH PANEL PC FOR HEAVILY POLLUTED ENVIRONMENTS



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

SPC Series

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



SPC-1209



(Front)



(Rear)

SPC-1509/ 1709/ 22W9



(Front)



(Rear)

SPC Series

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

ARM-BASED PANEL PC

Avalue RISC Platform: A Choice Beyond X86 Platform

Knowing arising demands in market, Avalue teams up to develop new RISC products with our experience and expertise in embedded computing. RISC series feature "3 Savings":



Space-Saving

Avalue's RISC platform is based on small size, 2.5" and SODIMM size



Energy-Saving

Each product is designed with low TDP and estimated power consumption is less than 1W (w/conditions)



Cost-Saving

By deducting redundant functions, execution process and hardware, total cost could be effectively controlled



RISC Panel PC

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





Avalue Bar Type Display deliver equally superb and consistent picture quality in both horizontal and vertical positions. Offering greater flexibility in messaging and advertising.

Offering up to 1000 nits of brightness, Avalue Bar-Type are perfect for entrances because they support both indoor and semi-outdoor applications.

An amazing 50,000-hour life translates to years of nonstop signage service and reliable industrial-grade performance far more economical than consumer models.

Avalue Bar Type Display select customized-mask panel to ensure the best quality and performance of display. Fanless and IP65 front protection design which can prevent the environmental factors from impact the stability of equipment.

INDUSTRIAL DISPLAY



Bar Type Monitor Solution

Model Number	BTM-286	BTM-370	BTM-420
Display Size	28.6" bar type TFT LCD	37" bar type TFT LCD	42" bar type TFT LCD
display area	698.4mm(H)x196.4mm(V)	904.32mm(H) x 254.34mm(V)	1039.68mm(H) x 259.92mm(V)
Resolution	1920(H)x540(V)	1920(H)x540(V)	1920(H)x480(V)
Brightness	1000 nits	1000 nits	500 nits
pixel pitch	0.363mm(H)x0.363mm(V)	0.47mm(H)x0.47mm(V)	0.5415mm(H)x0.5415mm(V)
Display Mode	VA, Normally Black	Normally Black	AMVA3, Normally Black
Contrast Ratio	1000	4000	3500
Support Color	16.7M (true 8bits)	1073.7M(10 bits. 8bits+FRC)	8bit, 16.7M
Response time	25msec	6.5msec	8msec
Surface	Anti-Glare, 3H	Anti-Glare, 3H	Anti-Glare, 3H
View Angle (H/V)	89 (U),89 (D),89 (L),89 (R)	89 (U),89 (D),89 (L),89 (R)	89 (U),89 (D),89 (L),89 (R)
Open Cell type	Mask	Mask	Mask
Input Source	VGA HDMI USB Type A for Service	VGA HDMI DVI USB Type A for Service	VGA HDMI DVI USB Type A for Service
Operating Temperature	-10°C ~ 60°C	0°C ~ 50°C	0°C ~ 60°C
Storage Temperature	-20°C ~ 70°C	-20°C ~ 60°C	-20°C ~ 60°C
Dimension	736.6 x 234.4 x 49.8 mm	927.7 x 281.1 x 55.76 mm	1135 x 31.5 x 63 mm
Net Weight	9 kg	8 Kg	5.1 kg
Wall Mount	100mm x 100mm, 4*M4	2-100mm x 100mm, 8*M6	2-100mm x 100mm, 8>M6
ower Input	DC 12V 5A Input	DC 24V 4A Input	100V AC
Area	32", 1/2	42", 1/2	48", 2/5

MEDICAL PANEL PC



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 provided 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.



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
- HL7 interface



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)



Medi-View Series

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

HID Series

Multi-touch Medical Panel PC
IP65 and Slim Fanless design



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

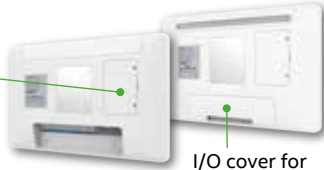
Optional Headset +
1D barcode scanner



Easy Maintenance

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

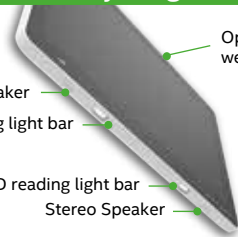
Service windows
for 2.5 storage
replacement



I/O cover for
cable arrangement

Designed for easy usage

Stereo Speaker
LED reading light bar



Optional 2.0M CMOS
web cam

LED reading light bar
Stereo Speaker

Reserve Enhance Space

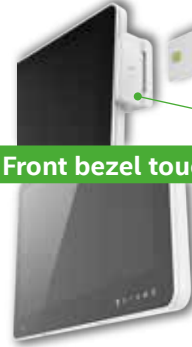
- Smart Card Reader
- Magnetic Strap Reader
- Finger Print Reader



Optional
Smart Card Reader

Front bezel touch keypad

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



HID Series

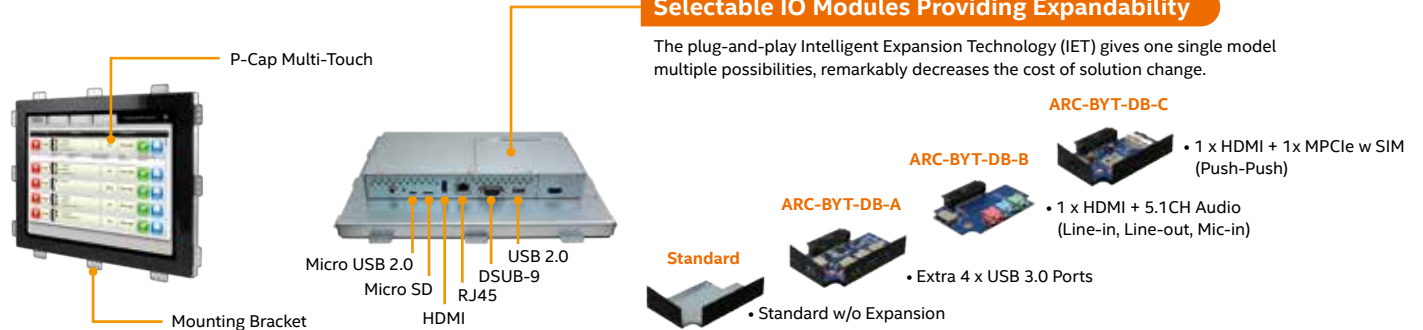
Model Number	HID-2132	HID-2232	HID-2332	HID-2334
LCD Size	21.5"	21.5"	23.8"	23.8"
Display Type	Full HD	FHD	Full HD	FHD
Resolution	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
Pixel Pitch	0.248 x 0.248	0.248 x 0.248	0.274 x 0.274	0.274 x 0.274
Luminance	250 cd/m ²	250 cd/m ²	250 cd/m ²	250 cd/m ²
Contrast Ratio	3000	3000	3000	3000
Viewing Angle	89 (U), 89 (D), 89 (L), 89 (R)	89 (U), 89 (D), 89 (L), 89 (R)	89 (U), 89 (D), 89 (L), 89 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	18 ms	18 ms	N/A	16 ms
Backlight	LED	LED	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
Touch Light Transmission	89%	89%	89%	86%
Touch Controller	USB interface, EETI	USB interface, EETI	USB touch (EETI)	USB interface, EETI
SBC	ARC-SKLU	ARC-SKLU	ARC-SKLU	ARC-KBLU
Processor	6th Gen Intel® Core™ i7/i5/i3/Celeron processor	6th Gen Intel® Core™ i5-6300U, 2-Core, 2.4GHz processor		7th Generation Intel® Kaby Lake Core™ i7/i5/i3/ Celeron® Processor
I/O Chipset	EC ITE IT8528E			EC ITE IT8518E
System Memory	1 x 260pin SODIMM socket up to 16GB DDR4 2133 SDRAM			1 x 260pin SODIMM socket up to 16GB DDR4 2133 SDRAM
Expansion	1 x Full Size (support half size, Auto switch for mSATA, USB, PCIe signal)			1 x M.2 (Key E, 2230), 1 x M.2 (Key M, 2280)
Storage	1 x 2.5" SATA3 SSD			1 x 2.5" SATA3 SSD
USB	4 x USB 3.0, 4 x USB 2.0 by pin header 1 x USB 2.0 (Isolated 5KV)	4 x USB 3.0, 4 x USB 2.0 by pin header 2 x USB 2.0 (Isolated 5KV)		4 x USB 3.0, 2 x USB 2.0 (by pin header)
COM Port	1 x RS-232/422/485, 1 x RS-232 1 x RS-232 (Isolated 5KV)	1 x RS-232/422/485, 1 x RS-232 1 x RS-232/422/485 (Isolated 5KV) on IET module		1 x RS-232/422/485, 1 x RS-232
Other	Dual LED Reading Light Bar, I/O Cover	HDMI Video out on IET module, DICOM pre-set		Dual LED Reading Light Bar, I/O Cover Optional 8 hours backup battery
Display Chipset	Intel® HD Graphics 520	Intel® HD Graphics 520		Intel® HD Graphics 620
Audio	Realtek ALC892	Realtek ALC892		Realtek ALC892
Audio Interface	2 x 0.5W	Line Out, Mic in, 2 x 0.5W		2 x 2W
Ethernet	1 x Intel® I219LM, 1 x Intel® I211AT 1 x Intel® I210AT (Isolated 5KV) on IET module	1 x Intel® I219LM, 1 x Intel® I211AT 2 x Intel® I210AT (Isolated 5KV) on IET module		1 x Intel® I211AT, 1 x Intel® I219LM 1 x Isolation 5-kV Intel® I210AT (by IET)
Power Connector	Lockable DC Jack	4 pin Mini-DIN		Lockable DC Jack
Power Type	AT / ATX	AT / ATX		AT / ATX
Adapter	AC/ DC medical power adapter Output: 90W Adapter (19V/4.74A Adapter)	AC/ DC medical power adapter +24Vdc, 3.75A max. (90W) Output Voltage		Medical grade 90W Adapter (19V/4.74A Adapter)
Construction (Front, Rear)	Plastic, Plastic	Plastic, Plastic	Plastic, Plastic	Plastic, Plastic
Dimension	539.6 x 342.6 x 45.2 mm	521.0 x 326.0 x 56.5 mm	587.0 x 367.5 x 59.0 mm	380 x 587 x 45.5mm
Weight	6.2 kg	7.5 kg	8.5 kg	8 kg
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	0 ~ 35°C (32 ~ 95°F)		0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)	-20°C ~ 60°C (-4°F ~ 140°F)		-20°C ~ 60°C (-4°F ~ 140°F)
Certification	CE, FCC Class B, UL60601-1 4th edition	DIN 6868157/ CE, FCC Class B, UL60601-1 4th edition		CE, FCC Class B, UL60601-1 4th edition
OS Information	Win 7/10/ Linux	Win 7/10/ Linux		Win 10/ Linux



Open Frame Panel PC

Selectable IO Modules Providing Expandability

The plug-and-play Intelligent Expansion Technology (IET) gives one single model multiple possibilities, remarkably decreases the cost of solution change.



OFT Series (4:3)			OFT Series (16:9, Rockchip)			
Model Number	OFT-1202	OFT-1502	OFT-07WR1	OFT-10WR1	OFT-15WR1	OFT-21WR1
LCD Size	12.1"	15.1"	7"	10.1"	15.6"	21.5"
Resolution	1024 x 768	1024 x 768	1280 x 800	1280 x 800	1920 x 1080	1920 x 1080
Luminance	600	250	300	350	220	250
Viewing Angle	160° (H), 140° (V)	160° (H), 140° (V)	160° (H/V)	170° (H/V)	170° (H/V)	178° (H/V)
Touch Type	PCAP	PCAP	PCAP	PCAP	PCAP	PCAP
Processor	Intel® Atom™ x5-Z8350 1.44 GHz Quad Core CPU		Rockchip RK3288			
System Memory	2G DDR3L RAM		2GB DDR3L RAM			
Wireless	802.11 b/g/n Wireless LAN and Bluetooth 4.0		802.11 b/g/n Wireless LAN and Bluetooth 4.0			
Storage	32G eMMC		16G eMMC			
External I/O Connector	1 x DC Jack 1 x Gigabit Ethernet 1 x USB 2.0 type A connector 1 x Micro USB Client (Android only) 1 x RS-232 type DB9 connector 1 x HDMI 1.4a connector 1 x Micro SD socket		1 x Giga Ethernet 2 x USB 2.0 type A connectors 1 x micro USB Client (Android only) 1 x HDMI 1.4a connector 1 x Head phone jack 1 x Micro SD slot 1 x DC jack 1 x Reset			
Internal I/O Connector	1 x USB interface 1 x RS-232 or RS-485 1 x mini PCIe socket 1 x SIM card slot 1 x Audio interface 2 x Speaker connectors 1 x Power button interface 1 x Backlight/volume control interface 1 x I²C interface 1 x Avalue IET interface for extension		1 x LVDS interface, 1 x MIPI interface 1 x USB Touch interface, 1 x I²C Touch interface 1 x USB CAM_DMIC interface, 1 x USB OTG 1 x RS232 (TX/RX), 1 x RS485 1 x GPIO's (16bit) interface 1 x Speaker interface (1.2W stereo) 1 x A-MIC interface 1 x Touch Button connector, 1 x I²C sensor interface 1 x Debug connector, 1 x Battery charger connector 1 x DC input 4pin header 1 x M.2 E-Key socket, 1 x RTC Battery 1 x eDP interface			
Power Requirement	DC 12 ~ 24V		DC 12 ~ 24V			
Power Type	DC Jack		DC Jack, DC input 4pin header, optional Powered LAN 802.3AT		DC Jack, DC input 4pin header	
Operating Temperature	0°C ~ 40°C		0°C ~ 40°C			
Storage Temperature	-10°C ~ 60°C		-20°C ~ 60°C			
Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing		0% ~ 90% Relative Humidity, Non-condensing			
Software Support	Window 10 IOT (64 Bit)		Android 8.1 Linux Debian 9			
Dimension	315 x 247 x 54 mm	371 x 295 x 55 mm	116 x 184 x 25 mm	252 x 166 x 38 mm	TBD	TBD
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A



Fanless /Slim /Fully Flat

- Slim type design for any attractive decoration
- Fully flat touch screen can be cleaned and operated easily
- Efficient integration into any embedded applications
- Projected capacitive touchscreen, with multi touch



OFT Series (16:9, Intel)				
Model Number	OFT-07W01	OFT-10W01	OFT-15W01	OFT-21W01
LCD Size	7"	10.1"	15.6"	21.5"
Resolution	1280 x 800	1280 x 800	1920 x 1080	1920 x 1080
Luminance	300	350	220	250
Viewing Angle	160° (H/V)	170° (H/V)	178° (H/V)	178° (H/V)
Touch Type	PCAP	PCAP	PCAP	PCAP
Processor	Intel® Atom™ Processor Z3735F 1.33GHz Quad Core CPU			
System Memory	2GB DDR3L RAM			
Wireless	802.11 b/g/n WiFi			
Storage	32GB or 8GB eMMC			
External I/O Connector	1 x 10/100 Ethernet port 2 x USB 2.0 type A connector 1 x HDMI 1.4a connector 1 x Head Phone Jack 1 x DC Jack			
Internal I/O Connector				
Power Requirement	DC 12 ~ 24V			
Power Type	1 x DC-in Jack, 1 x DC-in header	1 x DC-in Jack, 1 x DC-in header Optional Powered LAN 802.3AT	1 x DC-in Jack, 1 x DC-in header	1 x DC-in Jack, 1 x DC-in header
Operating Temperature	0°C ~ 40°C			
Storage Temperature	-20°C ~ 60°C			
Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing			
Software Support	Windows 10/ Android 4.4/ Android 5.1/ Ubuntu 16.04			
Dimension	116 x 184 x 25 mm	252 x 166 x 38 mm	387 x 235 x 38 mm	500 x 292 x 47 mm

Easy Mounting Solutions

Wall Mount

Panel Mount





Open Frame Panel PC



Slim Design



Full Flat Screen



P-Cap Touch



Dual Display

OFT Series				
Model Number	OFT-07W03	OFT-10W03	OFT-15W03	OFT-21W03
LCD Size	7"	10.1"	15.6"	21.5"
Resolution	1280 x 800	1280 x 800	1920 x 1080	1920 x 1080
Luminance	300	350	220	250
Viewing Angle	160° (H/V)	170° (H/V)	170° (H/V)	178° (H/V)
Touch Type	PCAP	PCAP	PCAP	PCAP
Processor	Intel® Atom™ x5-Z8350: 2M Cache, up to 1.92 GHz			
System Memory	2G / 4G DDR3L RAM			
Wireless	802.11a/b/g/n/ac Wireless LAN and Bluetooth 4.0+			
Storage	32G / 64G eMMC			
External I/O Connector	1 x 10/100 Ethernet 1 x USB 2.0 / 1 x USB 3.0 type A connectors 1 x micro USB Client (Android only) 1 x HDMI 1.4a connector 1 x Head phone jack 1 x Micro SD slot 1 x DC jack 1 x Reset			
Internal I/O Connector	1 x LVDS interface, 1 x eDP interface 1 x USB Touch interface, 1 x I ² C Touch interface 1 x USB CAM_DMIC interface, 1 x USB OTG 1 x RS232 (TX/RX), 1 x RS485 1 x GPIO's (16bit) interface 1 x Speaker interface (2.8W/4Ω stereo) 1 x A-MIC interface 1 x Touch Button connector, 1 x I ² C sensor interface 1 x Debug connector, 1 x DC input 4pin header 1 x M.2 E-Key socket, 1 x RTC Battery			
Power Requirement	DC 12 ~ 24V			
Power Type	DC Jack, DC input 4pin header			
Operating Temperature	0°C ~ 40°C			
Storage Temperature	-20°C ~ 60°C			
Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing			
Software Support	Win 10 / Linux 19.04			
Dimension	116 x 184 x 25 mm	252 x 166 x 38 mm	TBD	TBD
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B



HDBaseT Monitor / HDBaseT Transmitter



HDBaseT Extender	
Model Number	IPM-TBOXB
HDBaseT Port	1 x RJ45 for HDBaseT-Out
USB	1 x USB 2.0 (TypeA)
Other	1 x HDMI Input
HDBaseT Port	1 x RJ45
Power Connector	+12V ~ +26V / Support Power over HDBaseT (PoH)
Power Requirement	+12~26V
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)
Dimension	130 x 130 x 25mm w/o Wall Mount Bracket
Weight	0.5 kg
Mounting Kit	Wall Mount
Operating Temperature	0°C ~ 50°C (32°F ~ 122°F)
Storage Temperature	-40°C ~ 75°C (-40°F ~ 167°F)
Operating Humidity	5 ~ 90% Relative Humidity, Non-condensing
Vibration Test	IEC 60068-2-64, Random, 5 ~ 500Hz, 1hr/axis
Shock Test	IEC 60068-2-64, Random, 5 ~ 500Hz, 1hr/axis

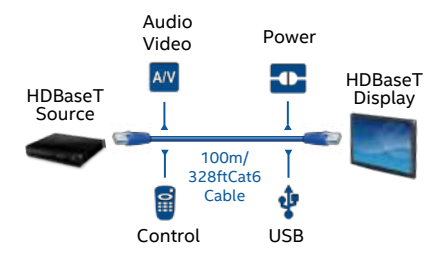
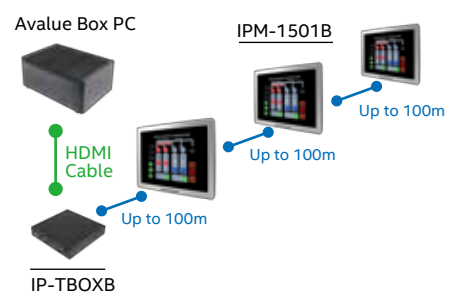
HDBaseT Monitor	
Model Number	IPM-1501B
LCD Size	15"
Display Type	XGA
Resolution	1024 x 768
Pixel Pitch (H x V)	0.252mm x 0.252mm
Luminance	400 cd/m2
Contrast Ratio	700
Viewing Angle	70 (U), 70 (D), 80 (L), 80 (R)
Response Time	11ms
Backlight	LED
Touch Type	5-wire Resistive
Touch Light Transmission	80%
Touch Controller	USB touch (PenMount)
HDBaseT Port	1 x RJ45 for HDBaseT-In 1 x RJ45 for HDBaseT-Out
USB	2 x USB
Other	1 x Headphone Jack
Audio Interface	Speaker Out
Power Connector	DC Jack (lockable)
Power Requirement	+12V ~ +26V / Support Power over HDBaseT (PoH) Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)
Adapter	
Construction (Front, Rear)	Front Aluminum, Rear Metal
Dimension	350 x 274 x 53.5 mm
Weight	4 kg
Mounting Kit	VESA 75 x 75, 100 x 100 / Din rail (Optional)
Operating Temperature	0°C ~ 50°C (32°F ~ 122°F)
Storage Temperature	-30°C ~ 70°C (-22°F ~ 158°F)
Operating Humidity	5~90% Relative Humidity, Non-condensing
IP Rating	IP65 Compliant Front Panel
Vibration Test	1.5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 30min/axis
Shock Test	50Grms, IEC 60068-2-27, Half Sine, 11ms

The Ultimate Cable that Carries All Your Industrial Computing

- Video, USB, and Power over standard Cat6 cable
- Powers up remote displays
- Up to 100m IPC-to-monitor
- Plug-and-play installation

HDBaseT™ Supports Daisy Chain Architecture

Perfectly Suits Digital Signage Installations



HD Video, Audio, Power and Controls on 100m LAN Cable



DESKTOP POS



Sleek & Stylish Design



Innovative Technologies



Versatile Applications



Multiple OS Supported

Slim & Fanless Design

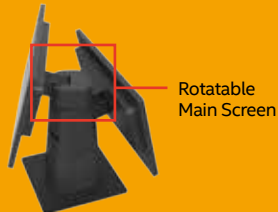
Quick Rail



Adjustable View Angle



Easy Upgrade & Maintenance



Built-in RFID/ NFC



Accessories/ Customer Display



Integrated Thermal Printer



I/O Ports



Portrait Mode



OS Support



Windows 10 for Retail
Android 6.x or up
Linux ubuntu



New POS Terminal

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



RENTY POS SOLUTIONS

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

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

POS Terminal

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

COMPACT POS

STYLISH DESIGN



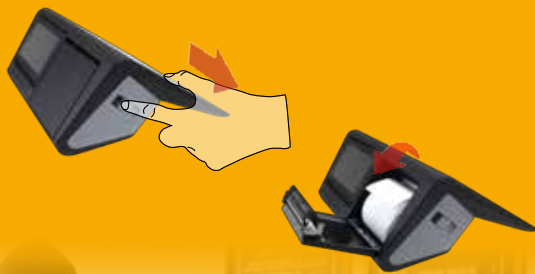
CUSTOMER DISPLAY

- 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-10P2
Processor	Intel® Atom™ Z3735F 1.33GHz Processor	Intel® Atom™ x5-Z8350 1.44GHz Processor
System Memory	2GB DDR3L SDRAM	4GB DDR3L SDRAM (Option for 2GB DDR3L SDRAM)
Storage	32G (Default)/64G (Optional) eMMC	32G eMMC
Operating System	Windows 10, Android 4.4 / 5.1	Windows 10 (64bit), Android 5.1 (64bit)
LCD Panel	10.1" LCD, 5" LCD (customer facing)	10.1" LCD, 5" LCD (customer facing)
Resolution	1280 x 800 (10.1"), 1280 x 720 (5")	1280 x 800 (10.1"), 1280 x 720 (5")
Touch Screen	Projected Capacitive Touch	Projected Capacitive Touch
Wireless LAN	Built-in IEEE 802.11 b/g/n	IEEE 802.11 a/b/g/n/ac (Optional)
Bluetooth	Built-in Bluetooth 4.0 + Class 1	Bluetooth 5.0 (Optional)
Serial Port	2 x RS-232 in DB9, Powered with 5/12V	2 x RS-232 in DB9, Powered with 5/12V
USB Port	4 x USB2.0	2 x USB 2.0, 2 x USB 3.0 1 x Micro USB
SD card	N/A	1 x SD card slot support up to 128GB
LAN Port	1 x RJ45	1 x RJ45
Cash Drawer	1 x RJ11 (12V/24V)	1 x RJ11 (24V)
NFC	ISO/IEC 14443 A/B, 15693/18092	ISO/IEC 14443 A/B, 15693/18092
Thermal Printer	Printing Method: Thermal Dot Line Printing Resolution: (W) 8 Dots/mm, (H) 8 Dots/mm Maximum Print Speed: 200mm/s Maximum Print Width: 72mm Maximum Paper Width: 80mm Type of Paper Cutting: Full Cut & Partial Cut	Printing Method: Thermal Dot Line Printing Resolution: (W) 8 Dots/mm, (H) 8 Dots/mm Maximum Print Speed: 200mm/s Maximum Print Width: 72mm Maximum Paper Width: 80mm Type of Paper Cutting: Full Cut & Partial Cut
Power Type	19.5V/ 6.15A 120W	19.5V/6.15A 120W
Dimensions	299 (L) x 316.2 (W) x 148.9 (H) mm	299 (L) x 316.2 (W) x 148.9 (H) mm
Weight	3kg±10%	3kg±10%
Operating Temperature	5°C ~ 40°C	5°C ~ 40°C
Storage Temperature	-10°C ~ 60°C	-10°C ~ 60°C
Operating Humidity	0 ~ 95% non-condensing	0 ~ 95% non-condensing
Certifications	CE/FCC/VCCI/CCC	CE/ FCC/ VCCI/ CCC



SEMI RUGGED TABLET



- Full system IP65
- 4 feet drop resistance by MIL-STD-810G standard
- Ultra-light design, only 1Kg included battery pack
- Corning Gorilla glass cover lens design
- Integrated NFC/Smart card reader/
Barcode scanner/ Camera module
- Built in various Sensor, Accelerometer (G-Sensor) 、
Gyroscope (GYRO-Sensor) 、Magnetic (M-Sensor) 、
Ambient Light Sensor



Semi-Rugged Tablet

Model Number	CAXA0
Processor	Intel® Celeron® N3350 1.1GHz Processor
System Memory	Onboard 4GB LPDDR4
Storage	64GB Solid State Drive
Operating System	Windows 10
LCD Size/Resolution	10.1", WXGA/1280x800
Luminance	300 cd/m ²
Touch Screen	5 Points Projective Capacitive
Wireless LAN	802.11 a/b/g/n/ac
Bluetooth	Bluetooth 4.1
Camera	2MP Front Camera 8MP Rear Camera With Auto Focus
NFC	ISO/IEC 14443 A/B, 15693/18092, NFCIP-1, NFCIP-2, Support MIFARE and Felica
Barcode Scanner	1D/2D Barcode Scanner (Optional)
Smart Card Reader	Half-Slot, Reads ISO 7816-1, 2, 3 & 4, T=0 & T=1; 5V Smart Card Reader (Optional)
MSR	N/A
Downside I/O Connectors	1 x Audio Jack, 2 x USB 2.0 Type A, 1 x Micro SD, 1 x DC Jack, 1 x HDMI Output
Control Button	1 x Power Button, 1 x Barcode Scanner Trigger
LED Indicator	1 x Power
Power Requirement	DC Jack +19V
Battery	28.44W Li-Polymer Battery
Battery Operating Time	8 hours
Construction	Rubber + Plastic
Dimensions	281 x 193.3 x 19.95 mm
Weight	1 kg
Operating Temperature	0°C ~ 40°C (32°F~104°F)
Storage Temperature	-10°C ~ 60°C (14°F~140°F)
IP Rating	IP65
Certifications	CE/FCC Class B, VCCI

Tailored to Your Needs



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