



Energy

Smart Manufacturing

Intelligent Transportation

Smart Retail

Digital Healthcare

Empowering a

SMART FUTURE

Avalue IoT Ready

3.5" Single Board Computer



Model Number	ECM-ADLS	ECM-CFS	ECM-KBLH	ECM-WHL	ECM-KBLU	ECM-EHL	ECM-EHL3	ECM-TGU	ECM-TGUC
Processor	Intel® LGA1700 Socket Supports 12th Gen. Intel® Core™ i9/i7/i5/i3/ Pentium®/ Celeron® Processors, up to 35W Max	8/9th Gen Intel® Core™ i7/i5/i3/Celeron® rPGA processor	7th Gen Intel® Core™ i7/i5/i3/ Celeron® processor	8th Gen Intel® Core™ i7/i5/i3/ Celeron® Processor (with CPU Bottom Mounted)	7th Gen Intel® Core™ i7/i5/i3/ Celeron® Processor	Onboard Intel® Pentium®/Celeron®/Atom™ SoC BGA Processor (Elkhart Lake Platform 4.5-12W)-(with CPU Bottom Mounted)	Onboard Intel® Pentium®/Celeron®/Atom™ SoC BGA Processor (Elkhart Lake Platform 4.5-12W) (with CPU Bottom Mounted)	Onboard 11th Gen Intel® Tiger Lake U Core™ & Celeron® BGA Processor (with CPU Bottom Mounted)	Onboard 11th Gen Intel® Tiger Lake U Core™ & Celeron® BGA Processor (with CPU Bottom Mounted)
System Chipset	Intel® R680E/Q670E/H610E Chipset	Intel® Q370/H310 Express Chipset	Intel® QM175 Express Chipset	N/A	N/A	N/A	N/A	N/A	N/A
System Memory	1 x 262-pin DDR5 4800MHz SO-DIMM supports up to 32GB	1 x 260-Pin DDR4 2400MHz SO-DIMM up to 32 GB	1 x 260-Pin DDR4 2400MHz SO-DIMM up to 16 GB	2X 260-pin DDR4 2400MHz SO-DIMM up to 64GB	1 x 260-Pin DDR4 2133MT/s SO-DIMM Up to 16 GB	1 x 260-pin DDR4 3200MHz SODIMM, supports Up to 32GB (non ECC Supported)	1 x 260-pin DDR4 3200MHz SODIMM, supports Up to 32GB (non ECC Supported)	1 x 260-pin DDR4 3200MHz SODIMM, supports Up to 32GB (non ECC Supported)	1 x 260-pin DDR4 3200MHz SODIMM, supports Up to 32GB (non ECC Supported)
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec.	H/W Reset, 1sec. ~ 65535sec.	H/W Reset, 1sec. ~ 65535sec.	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. and 1sec./step	H/W Reset, 1sec. ~ 65535sec. and 1sec./step
Expansion	1 x M.2 (2230) E-Key	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 M.2 (2242/3042) B Key, (SATA, USB3.0/2.0, SIM Slot) 1 x M.2 E Key 2230, (PCIe, USB2.0, CNVI)	1 x Full Size mPCIe, 1 x M.2 (2242/3042) B Key	1 x M.2 (2242) B-Key 1 x M.2 (2230) E-Key	1 x M.2 (2242) B-Key 1 x M.2 (2230) E-Key 1 x M.2 (2260 for 2242) M-Key	1 x M.2 (2242) B-Key 1 x M.2 (2230) E-Key 1 x M.2 (2260 for 2242) M-Key	1 x M.2 (2242) B-Key 1 x M.2 (2230) E-Key 1 x M.2 (2280) M-Key
Storage	1 x M.2 (2280) M-Key	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 SATA III 1 x M.2 B Key (2242)	1 x mSATA support from Mini PCIe, 1 x M.2 (M.2 support SATA or PCIe x1/USB)	1 x M.2 (2242) B-Key 1 x SATA III	1 x M.2 (2242) B-Key 1 x M.2 (2260 for 2242) M-Key 1 x SATA III	1 x M.2 (2242) B-Key 1 x M.2 (2260 for 2242) M-Key 1 x SATA III	1 x M.2 (2242) B-Key 1 x M.2 (2280) M-Key 1 x SATA III
I/O	4 x USB 2.0, 4 x USB 3.2 (H610E USB 3.2 Support Gen 1 only) 2 x RS-232/422/485 1 x 8bit GPIO, 1 x SPI, 1 x e-SPI	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 3.1, 1 x SATA III, 1 x 8-bit 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	4 x USB 2.0, 2 x USB 3.1 Gen2 1 x SATA III, 3x RS-232, 1 x RS-422/485 1 x 8bit GPIO, 1 x e-SPI	6 x USB 2.0, 2 x USB 3.1 Gen2 1 x SATA III, 4x RS-232, 2 x RS-232/422/485 1 x 8bit GPIO, 1 x e-SPI, 1 x SPI	4 x USB 2.0, 4 x USB 3.1 Gen2 1 x SATA III, 4x RS-232, 2 x RS-232/422/485 1 x 8bit GPIO, 1 x LPC, 1 x SPI	5 x USB 2.0, 3 x USB 3.2 1 x SATA III, 5x RS-232, 1 x RS-232/422/485 1 x 8bit GPIO, 1 x SPI, 1 x e-SPI
Display Chipset	Intel® 12th Gen. CPU integrated HDMI, DP++, 1 x 2CH LVDS/eDP Supports triple display	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® 7th SoC Processor integrated Supports triple display	Intel® UHD Graphics 620 (i7-8665UE, i5-8365UE, i3-8145UE), Intel® UHD Graphics 610 (4305UE) support triple display	Intel® HD Graphics 620 (i7-7600U, i5-7300U, i3-7100U), Intel® HD Graphics 610 (Celeron 3965U) support triple display	Intel® UHD Graphics for 10th Gen Intel® Processors HDMI, DP, eDP Supports triple display	Intel® UHD Graphics for 10th Gen Intel® Processors 2x DP++, 1 x 2CH LVDS/eDP (default LVDS) Supports triple display	Intel® 11th UP3 SoC Processor integrated 2x DP++, 1 x 2CH LVDS, 1 x eDP Supports four display	Intel® 11th UP3 SoC Processor integrated 2x DP++, 1 x 2CH LVDS/eDP (default LVDS) Supports triple display
Resolution	HDMI: 4096 x 2304 @ 60Hz DP++: 4096 x 2304 @ 60Hz LVDS: 1920 x 1080 @ 60Hz or eDP 1920 x 1080 @ 60Hz 2 Lanes	Dual HDMI: Max. resolution 4096 x 2304 @ 30Hz LVDS: 1920 x 1080 @ 60Hz	Dual HDMI: Max. resolution 4096 x 2160 @ 24Hz LVDS: 1920 x 1080 @ 60Hz	Dual HDMI: Max. Resolution 4096 x 2160 @ 24/30Hz, LVDS: 1920 x 1080 @ 60Hz	Dual HDMI: Max. Resolution 4096 x 2160 @ 24Hz, LVDS: 1920 x 1080 @ 60Hz	HDMI: Max. resolution 4096 x 2160 @ 24Hz DP: Max. resolution 4096 x 2160 @ 60Hz eDP: Max. resolution 4096 x 2160 @ 60Hz	2 x DP++: Max. resolution 4096 x 2304 @ 60Hz Dual Channel 18/24bits LVDS Max. resolution 1920 x 1080 @ 60Hz eDP Max. resolution 4096 x 2160 @ 60Hz	2 x DP++: Max. resolution 4096 x 2304 @ 60Hz Dual Channel 18/24bits LVDS Max. resolution 1920 x 1080 @ 60Hz eDP Max. resolution 4096 x 2160 @ 60Hz	2 x DP++: Max. resolution 4096 x 2304 @ 60Hz Dual Channel 18/24bits LVDS Max. resolution 1920 x 1080 @ 60Hz eDP Max. resolution 4096 x 2160 @ 60Hz
Audio Chipset	Realtek Audio codec Mic-In, Line-In, Line-Out	Realtek Audio codec Mic-In, Line-In, Line-Out	Realtek Audio codec Audio Amp.:2W	Realtek Audio codec Mic-In, Line-Out	Realtek Audio codec Mic-In, Line-In, Line-Out	Realtek Audio codec Mic-In, Line-In, Line-Out	Realtek Audio codec Mic-In, Line-In, Line-Out 2 x 2W Audio Amplifier	Realtek Audio codec Mic-In, Line-In, Line-Out 2 x 2W Audio Amplifier	Realtek Audio codec Mic-In, Line-In, Line-Out 2 x 2W Audio Amplifier
Ethernet Chipset	2 x Intel® i226LM	1 x Intel® I210AT 1 x Intel® I219LM	1 x Intel® I210AT 1 x Intel® I219LM	1 x Intel® I210AT 1 x Intel® I219LM	1 x Intel® I211AT 1 x Intel® I219LM	2 x Intel® I226LM/IT	1 x Intel® I226LM 2 x Intel® I210AT	3 x Intel® I226LM/IT	1 x Intel® I225V 1 x Intel® I219LM
Power Requirement	+12V	+12V	+12V	+12V	+12V ~ +24V	+9V ~ +36V	+9V ~ +36V	+12V ~ +24V	+12V ~ +24V
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temperature	0°C ~ 60°C	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) -40°C ~ 85°C (-40°F ~ 185°F) -For wide temperature CPU SKU	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F) -20 ~ 60°C (-4~140°F) For wide temperature CPU SKU	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	5.7" x 4" (146 mm x 101 mm)	5.7" x 4" (146 mm x 101 mm)	5.7" x 4" (146 mm x 101 mm)	5.7" x 4" (146 mm x 101 mm)	5.7" x 4" (146 mm x 101 mm)	5.7" x 4" (146 mm x 101 mm)	5.7" x 4" (146 mm x 101 mm)	5.7" x 4" (146 mm x 101 mm)	5.7" x 4" (146 mm x 101 mm)



3.5" Single Board Computer



Model Number	ECM-APL	ECM-APL2-A	ECM-BYT2	ECM-BYT
Processor	Intel® Pentium®/Celeron®/Atom™ SoC Processor	Intel® Pentium®/Celeron®/Atom™ SoC Processor (with CPU Bottom Mounted)	Intel® Atom™/ Celeron® processor (with CPU Bottom Mounted)	Intel® Atom™/ Celeron® processor
System Chipset	N/A	N/A	N/A	N/A
System Memory	1 x 204-pin DDR3L 1600 & 1333MHz SO-DIMM supports up to 8 GB SDRAM (Non-ECC)	1 x 204-pin DDR3L 1600 & 1333MHz SO-DIMM supports up to 8 GB SDRAM (Non-ECC)	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
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec. and 1sec./step	H/W Reset, 1sec. ~ 65535sec. and 1sec./step	H/W Reset, 1sec. ~ 65535sec and 1sec. or 1min./step	H/W Reset, 1sec. ~ 65535sec and 1sec. or 1min./step
Expansion	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 Mini PCIe Supports mSATA
Storage	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	1 x CFAST Slot 1 x mSATA Supported from Mini PCIe
I/O	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	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, 1 x PS2/ KB & MS	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
Display Chipset	Intel® HD Graphics 500 Supports triple display	Intel® HD Graphics 500 Supports triple display	Intel® HD Graphics Supports dual display	Intel® HD Graphics Supports dual display
Resolution	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	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
Audio Chipset	Realtek Audio codec Mic-In, Line-In, Line-Out	Realtek Audio codec Mic-In, Line-In, Line-Out	Realtek Audio codec Mic-In, Line-In, Line-Out	Realtek Audio codec Mic-In, Line-In, Line-Out
Ethernet Chipset	2 x Intel® I210AT	2 x Intel® I210AT	2 x Realtek 8111E	2 x Intel® I210AT
Power Requirement	+12V ~ +24V	+12V ~ +24V	+12V ~ +24V	+12V ~ +24V
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temperature	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)	0°C ~ 60°C (32°F ~ 140°F) -40°C ~ 85°C (-40°F ~ 185°F) (Optional for Wide Temp.)
Dimension (L x W)	5.7" x 4" (146 mm x 101 mm)	5.7" x 4" (146 mm x 101 mm)	5.7" x 4" (146 mm x 101 mm)	5.7" x 4" (146 mm x 101 mm)

Mini-ITX

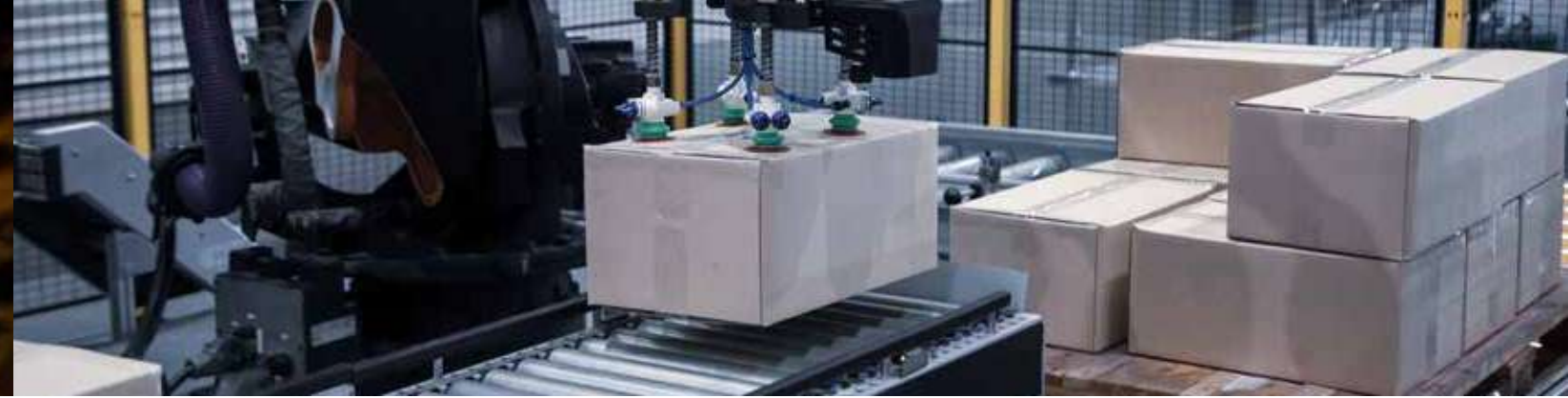


Model Number	EMX-R680P	EMX-H610P	EMX-H310P	EMX-C246P	EMX-Q170KP	EMX-H110KP
Processor	Intel® LGA1700 Socket Supports 12th Gen. Core™ i9/i7/ i5/ i3/ Pentium®/ Celeron® Processors (Max. TDP at 125W)	Intel® LGA1700 Socket Supports 12th Gen. Core™ i9/i7/ i5/ i3/ Pentium®/ Celeron® Processors (Max. TDP at 125W)	Intel® LGA1151 Socket Supports 8/9th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors	Intel® LGA1151 Socket Supports 8/9th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors	Intel® LGA1151 Socket Supports 6/7th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors (Max. TDP at 95W)	Intel® LGA1151 Socket Supports 6/7th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors (Max. TDP at 95W)
System Chipset	Intel® R680E Chipset	Intel® H610E Chipset	Intel® H310 Chipset	Intel® C246 Chipset	Intel® Q170 Chipset	Intel® H110 Chipset
System Memory	2 x 262-pin DDR5 4800MHz DIMM supports up to 64GB (ECC memory supported by CPU)	2 x 262-pin DDR5 4800MHz DIMM supports up to 64GB (ECC memory supported by CPU)	2 x 260-pin DDR4 2400/2666MHz SO-DIMM supports up to 64GB	2 x 260-pin DDR4 2400/2666MHz SO-DIMM supports up to 64GB (ECC memory supported by CPU)	2 x 260-pin DDR4 2400MHz SO-DIMM supports up to 32GB	2 x 260-pin DDR4 2400MHz SO-DIMM supports up to 32GB
Expansion	1 x PCI-e x16 2 x M.2 M-Key 1 x M.2 E-Key	1 x PCI-e x16 1 x M.2 M-Key 1 x M.2 E-Key 1 x M.2 B-Key	1 x PCI-e x16 1 x M.2 B-Key 1 x M.2 E-Key	1 x PCI-e x16 1 x M.2 M-Key 1 x M.2 E-Key	1 x PCI-e x16 1 x Full Size Mini PCI-e 1 x Half Size Mini PCI-e	1 x PCI-e x16 1 x Full Size Mini PCI-e 1 x Half Size Mini PCI-e
Display	Intel® 12th Gen. CPU integrated HDMI + DP + DP + LVDS/ eDP	Intel® 12th Gen. CPU integrated VGA + HDMI + LVDS/eDP VGA + DP + LVDS/eDP VGA + DP + HDMI	Intel® 8/9th Gen. CPU integrated VGA + LVDS, VGA + HDMI, VGA + DP, HDMI + LVDS, HDMI + DP, LVDS + DP	Intel® 8/9th Gen. CPU integrated VGA + HDMI + LVDS VGA + HDMI + HDMI	Intel® 6/7th Gen. CPU integrated VGA + HDMI + LVDS VGA + DP + LVDS VGA + DP + HDMI	Intel® 6/7th Gen. CPU integrated VGA + LVDS, VGA + HDMI, VGA + DP, HDMI + LVDS, HDMI + DP, LVDS + DP
Resolution	HDMI: 2.1b (supported with LSPCON): 8K@60 2 x DP++: 4096x2160@60Hz LVDS: 1920 x 1080 @ 60Hz or eDP 1920 x 1080 @ 60Hz 2 Lanes	HDMI: 4096 x 2304 @ 60Hz 1 x DP++: 4096x2160@60Hz LVDS: 1920 x 1080 @ 60Hz or eDP 1920 x 1080 @ 60Hz 2 Lanes	VGA: 2048 x 1536 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 30Hz DP++: 4096x2160@30Hz Dual channel 18/24-bits LVDS (Chrontel CH7511B eDP to LVDS) By BOM option	VGA: 2048 x 1536 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 30Hz Dual channel 18/24-bits LVDS (Chrontel CH7511B eDP to LVDS) By BOM option	VGA: 2560 x 1600 @ 60 Hz 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: 2560 x 1600 @ 60 Hz HDMI: 4096 x 2160 @ 24Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz Dual channel 18/24-bits LVDS (Chrontel CH7511B eDP to LVDS)
Audio	Realtek Audio codec Mic-in, Line-out 2W4Q Audio Amplifier	Realtek Audio codec Mic-in, Line-out, Line-in 2W4Q Audio Amplifier	N/A	Realtek Audio code 6W Audio Amplifier	Realtek Audio code Mic-in, Line-out, Line-in 6W Audio Amplifier	Realtek Audio code Mic-in, Line-out, Line-in 6W Audio Amplifier
Ethernet	4 x Intel® i226LM	2 x Intel® i226LM	1 x Intel® I219LM 3 x Intel® I210AT	1 x Intel® I219LM 3 x Intel® I210AT	1 x Intel® I219LM 1 x Intel® I210AT	1 x Intel® I219LM 1 x Intel® I210AT
USB/SATA/COM/LAN	14/2/5/4	8/2/6/2	12/3/6/4	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	+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	AT/ATX
Operating Temp.	0°C ~ 55°C (32°F ~ 131°F)	0°C ~ 55°C (32°F ~ 131°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)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)
Weight	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)

Thin Mini-ITX



Model Number	EMX-ADLP	EMX-TGLP	EMX-TGLC	EMX-SKLUP
Processor	Onboard 12th Gen Intel® Alder Lake-P Core™ & Celeron® BGA Processor	Onboard 11th Gen Intel® Tiger Lake U Core™ & Celeron® BGA Processor	Onboard 11th Gen Intel® Tiger Lake U Core™ & Celeron® BGA Processor	Onboard 6th Gen. Intel® Core™ & Celeron® BGA Processor
System Chipset	N/A	N/A	N/A	N/A
System Memory	2 x 262-pin DDR5 4800MHz SO-DIMM supports up to 64GB	2 x 260-pin DDR4 3200MHz SO-DIMM supports up to 64GB	2 x 260-pin DDR4 3200MHz SO-DIMM supports up to 64GB	2 x 260-pin DDR4 2133MHz SO-DIMM supports up to 32GB
Expansion	1x PCI-e x8 (For H series only) 1x PCI-e x8 (For P & U series) 2x M.2 B-Key 1x M.2 M-Key 1x M.2 E-Key	1x M.2 B-Key 1x M.2 E-Key	1x PCI-e x4 1x M.2 B-Key 1x M.2 E-Key	1x PCI-e x1 1x M.2 B-Key, 1x M.2 A-Key, 1x SD card slot
Display	Intel® 12th SoC Processor integrate 2 x DP++, 2 x DP, eDP, LVDS (Maximum: 6 for quadruple independent displays)	Intel® 11th UP3 SoC Processor integrated 2 x DP++, 2 x DP, eDP, LVDS (Maximum: 6 for quadruple independent displays)	Intel® 11th UP3 SoC Processor integrated 2 x DP++, eDP, LVDS Triple Display	Intel® 6th Generation CPU integrated Triple Display
Resolution	2 x DP++: 4096 x 2304 @ 60 Hz, DP: 4096 x 2304 @ 60 Hz, (2 x DP++, 2 x DP, eDP, LVDS) Dual Channel 18/24bits LVDS 1920 x 1080 Hz eDP 4096 x 2304 @ 60 Hz	2 x DP++: 4096 x 2304 @ 60 Hz, DP: 4096 x 2304 @ 60 Hz, (2 x DP++, 2 x DP, eDP, LVDS) Dual Channel 18/24bits LVDS 1920 x 1080 Hz eDP 4096 x 2304 @ 60 Hz	2 x DP++: 4096 x 2304 @ 60 Hz, DP: 4096 x 2304 @ 30Hz, (2 x DP++, eDP, LVDS) Dual Channel 18/24bits LVDS 1920 x 1080 Hz eDP 4096 x 2304 @ 60 Hz	HDMI 1.4b: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 30Hz 2 x DP++: 4096 x 2160 @ 60Hz (1x HDMI/DP, 1x DP++), Dual channel 18/24-bits LVDS, Co-lay eDP 1.3: 4096 x 2160 BOM optional
Audio	Realtek Audio codec Mic-in, Line-out 2 x 6W Audio Amplifier	Realtek Audio codec Mic-in, Line-out 2 x 6W Audio Amplifier	Realtek Audio codec Mic-in, Line-out 2 x 6W Audio Amplifier	Realtek Audio code Mic-in, Line-out 2 x 6W Audio Amplifier
Ethernet	3 x Intel® I226LM/IT 1 x Intel® I219LM	1 x Intel® I225LM/IT 1 x Intel® I219LM 2 x Intel® I210AT/IT	1 x Intel® I226LM 1 x Intel® I219LM	1 x Intel® I219LM 1 x Intel® I210AT
USB/SATA/COM/LAN	8/2/6/4	8/2/6/4	8/2/6/2	8/2/6/2
Power Requirement	+12V-24V	+12V-24V	+12V-24V	+12V-24V
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temp.	0 ~ 60°C (32°F ~ 140°F) -20 ~ 60°C (-4~140°F) - For wide temperature CPU SKU	0 ~ 60°C (32°F ~ 140°F) -20 ~ 60°C (-4~140°F) - For wide temperature CPU SKU	0 ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)
Weight	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)



Model Number	EMX-EHLP	EMX-APLP	EMX-BYT2	EMX-C246DP	EMX-H310DP
Processor	Intel® Pentium®/ Celeron®/ Atom™ SoC Processor	Intel® Celeron®/ Atom™ SoC Processor	Intel® Celeron® Processor J1900 (2M Cache, Up to 2.42 GHz)	Intel® LGA1151 Socket Supports 8/9th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors	Intel® LGA1151 Socket Supports 8/9th Gen. Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors
System Chipset	N/A	N/A	N/A	Intel® C246 Chipset	Intel® H310 Chipset
System Memory	1 x 260-pin DDR4 3200MHz SO-DIMM supports up to 32GB (Only Atom® x6000 Series Processors support IB ECC)	2 x 204-pin DDR3L 1333/1600MHz SO-DIMM supports up to 16GB	2 x 204-pin DDR3L 1333MHz SO-DIMM supports up to 8GB	2 x 260-pin DDR4 2400/2666MHz SO-DIMM supports up to 64GB (ECC memory supported by CPU)	2 x 260-pin DDR4 2400/2666MHz SO-DIMM supports up to 64GB
Expansion	1x M.2 B-Key 1x M.2 E-Key	1x PCI-e 1x Mini PCI-e 1x M.2 E-Key 1x SIM card slot	1x PCI-e 1x Mini PCI-e, 1x Mini PCI-e (Support mSATA only) 1x SD card slot, 1x SIM card slot	1x PCI-e x16 1x M.2 M-Key 1x M.2 E-Key 1x M.2 B-Key	1x PCI-e x16 1x M.2 E-Key 1x M.2 B-Key
Display	Intel® UHD Graphics for 10th Gen Intel® Processors Triple Display DP++, HDMI, LVDS (eDP by BOM option)	Intel® HD Graphics 500 Triple Display LVDS + (DP/HDMI) + DP++	Intel® HD Graphics HDMI + LVDS, HDMI + VGA, VGA + LVDS	Intel® 8/9th Gen. CPU integrated HDMI + HDMI + LVDS	Intel® 8/9th Gen. CPU integrated HDMI + LVDS
Resolution	1 x HDMI 2.0b: 4096 x 2160 @ 60 Hz 1 x DP++: 4096 x 2160 @ 60 Hz Dual Channel 18/24bits LVDS 1920 x 1080 1 x eDP 4096 x 2160 @ 60Hz (BOM optional)	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 (1x HDMI/DP, 1x DP)	VGA: 2560 x 1600 @ 60Hz HDMI: 1920 x 1200 @ 60Hz LVDS: 1920 x 1080 @ 60Hz or eDP 1920 x 1080 @ 60Hz 2 Lanes	HDMI 1.4b: 3840 x 2160 @ 30 Hz 2560 x 1600 @ 30 Hz	HDMI 1.4b: 3840 x 2160 @ 30 Hz 2560 x 1600 @ 30 Hz
Audio	Realtek Audio code Mic-in, Line-out 2 x 6W Audio Amplifier	Realtek Audio codec Mic-in, Line-out 2 x 2W Audio Amplifier	Realtek Audio codec Mic-in, Line-out 2 x 2W Audio Amplifier	Realtek Audio code 6W Audio Amplifier	Realtek Audio code 6W Audio Amplifier
Ethernet	4 x Intel® I226LM/IT	2 x Intel® I226LM	2 x Intel® I210AT	1 x Intel® I219LM 2 x Intel® I210AT	1 x Intel® I219LM 2 x Intel® I210AT
USB/SATA/COM/LAN	8/2/6/4	9/2/6/2	6/2/6/2	10/2/4/3	8/2/4/3
Power Requirement	+12V - 24V	+12V - 24V	+12V	+12V - 26V	+12V - 26V
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temp.	0 ~ 60 °C (32 ~ 140 °F) -20 ~ 60°C (-8 ~ 140°F) - For wide temperature CPU SKU	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)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)	6.69" x 6.69" (170 mm x 170 mm)
Weight	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)

ATX/ Micro ATX



Model Number	EAX-R680P	EAX-W480P	EAX-C246P	EAX-C246BP	EAX-Q170KP (C236KP)
Processor	Intel® LGA1700 Socket Supports 12th Gen. Intel® Core™, Pentium®/ Celeron® Processors	Intel® LGA1200 Socket Supports 10th Gen. Intel® Xeon® (Workstation)/ Core™, Pentium®/ Celeron® Processors	Intel® LGA1151 Socket Supports 8/9th Gen. Intel® Xeon® (Workstation)/ Core™, Pentium®/ Celeron® Processors	Intel® LGA1151 Socket Supports 8/9th Gen. Intel® Xeon® (Workstation)/ Core™, Pentium®/ Celeron® Processors	Intel® LGA1151 Socket Supports 6/7th Gen. Core™, Pentium®/ Celeron® Processors (Max. TDP at 95W) * C236KP support Intel® Xeon® (Workstation)
System Chipset	Intel® R680E Chipset	Intel® W480E Chipset	Intel® C246 Chipset	Intel® C246 Chipset	Intel® Q170 Chipset (Co-lay C236 Chipset)
System Memory	4 x 288-pin DDR4 3200MHz DIMM supports up to 128GB (ECC memory supported by CPU)	4 x 288-pin DDR4 400-2933MHz DIMM supports up to 128GB (ECC memory supported by CPU)	4 x 288-pin DDR4 400/2666MHz DIMM supports up to 128GB (ECC memory supported by CPU)	4 x 288-pin DDR4 400/2666MHz DIMM supports up to 128GB (ECC memory supported by CPU)	4 x 288-pin DDR4 2400MHz DIMM supports up to 64GB * C236; (ECC memory supported by CPU)
Expansion	1 x PCI-e x16 or 2 x PCI-e x8, 3 x PCI-e x4 1 x PCI-e x2 2 x M.2 M-Key	1 x PCI-e x16 or 2 x PCI-e x8, 4 x PCI-e x4	1 x PCI, 1 x PCI-e x16 or 2 x PCI-e x8 by BOM, 1 x PCI-e x4, 3 x PCI-e x1, 1 x M.2 M-Key, 1 x M.2 A-Key=	1 x PCI, 1 x PCI-e x16 or 2 x PCI-e x8 by auto switch, 3 x PCI-e x4	4 x PCI, 1 x PCI-e x16 1 x PCI-e x4, 1 x PCI-e x1 1 x M.2 Key-A, 1 x SIM card slot, 1 x Full/Half Size Mini-PCIe
Display	Intel® 12th Gen. CPU Integrated HDMI + DP++ + DP++	Intel® 10th Gen. CPU Integrated DVI-D + DP++ + DP++	Intel® 8/9th Gen. CPU Integrated VGA + HDMI + DP	Intel® 8/9th Gen. CPU Integrated DVI-I + DP++ + DP++	Intel® 6/7th Gen. CPU Integrated VGA + HDMI + DP
Resolution	HDMI: 3840 x 2160 @ 60Hz DP: 7680 x 4320 @ 60Hz DP++: 1920 x 1080 @ 60Hz	DVI-D: 2048 x 1536 @ 60Hz DP++: 3840 x 2160 @ 60Hz	VGA: 2048 x 1536 @ 60 Hz HDMI: 3840 x 2160 @ 30 Hz, 2560 x 1600 @ 30 Hz DP: 4096 x 2304 @ 60Hz	DVI-I: 2048 x 1536 @ 60 Hz 2 x DP++: 4096 x 2304 @ 60Hz	VGA: 2048 x 1536 @ 50Hz HDMI: 4096 x 2160 @ 24Hz, 2560 x 1600 @ 60Hz DP: 4096 x 2304 @ 60Hz
Audio	Realtek Audio codec Mic-in, Line-in, Line-out 1 x 6W Audio Amplifier	N/A	Realtek Audio code Mic-in, Line-in, Line-out 1 x 6W Audio Amplifier	Realtek Audio code Mic-in, Line-in, Line-out 1 x 6W Audio Amplifier	Realtek Audio code Mic-in, Line-in, Line-out 2 x 6W Audio Amplifier
Ethernet	1 x Intel® I225LM 1 x Intel® X550AT2 (optional)	1 x Intel® I225V 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 1 x Intel® I211AT/I20AT
USB/SATA/COM/LAN	14/4/6/4	12/4/10/3	14/6/10/2	16/4/10/2	12/6/6/2
Power Requirement	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5VSB/+3.3V/-12V	+12V/+5V/5Vsb/+3.3V/-12V
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temp.	0°C ~ 55°C (32°F ~ 131°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" (304.8 mm x 243.84 mm)	12" x 9.6" (304.8 mm x 243.84 mm)	12" x 9.6" (304.8 mm x 243.84 mm)	12" x 9.6" (304.8 mm x 243.84 mm)	12" x 9.6" (304.8 mm x 243.84 mm)
Weight	1.54 lbs (0.7 kg)	1.32 lbs (0.6 kg)	1.32 lbs (0.6 kg)	1.32 lbs (0.6 kg)	1.32 lbs (0.6 kg)

Pico-ITX/ 1.8" SBC



Model Number	ERX-W480P	EPX-EHLP	EPX-APLP	EZX-EHLP
Processor	Intel® LGA1200 Socket Supports 10th Gen. Intel® Xeon® (Workstation)/ Core™, Pentium®/Celeron® Processors (Max. TDP at 95W)	Intel® Celeron®/ Atom™ SoC Processor	Intel® Celeron®/ Atom™ SoC Processor	Intel® Pentium®/ Celeron® / Atom™ Processor
System Chipset	Intel® W480E Chipset	N/A	N/A	N/A
System Memory	4 x 288-pin DDR4 2400-2933MHz DIMM supports up to 128GB (ECC memory supported by CPU)	1 x 260-pin DDR4 2666MHz SO-DIMM supports up to 32 GB	1 x 204-pin DDR3L 1600 & 1333MHz SO-DIMM supports up to 8 GB	Single channel LPDDR4 4/8GB memory down
Expansion	2 x PCI-e x16 (1 x PCI-e x16 or 2 x PCIe-x8), 2 x PCI-e x4	1 x M.2 Key-B, 1 x M.2 Key-E, 1 x Micro SIM to SIM adapter by option	1 x M.2 Key-B, 1 x M.2 Key-E, 1 x Micro SIM to SIM adapter by option	1 x M.2 Key-B, 1 x Micro SIM to SIM adapter by option onboard eMMC
Display	Intel® 10th Gen. CPU Integrated VGA / HDMI /DP++ / LVDS Triple display	Intel® UHD Graphics for 10th Gen Intel® Processors 2 x DP++/LVDS	Intel® HD Graphics 500 HDMI + LVDS + DP++	Intel® UHD Graphics for 10th Gen Intel® Processors Mini DP/ eDP
Resolution	VGA: 2048 x 1536 @ 60Hz HDMI 2.0a: 4096 x 2304 @ 60Hz DP++: 4096 x 2304 @ 60Hz LVDS: 1920 x 1080 Dual channel 18/24-bits	DP++: 4096 x 2160 @ 60Hz LVDS: 1920 x 1080 (2 x DP++, LVDS)	HDMI 1.4b: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 30Hz DP 1.2a: 4096 x 2160 @ 60Hz LVDS: 1920 x 1800 @ 60Hz	mini DP++ : 4096 x 2160 @ 60 Hz eDP: 4096 x 2160 @ 60 Hz LVDS: 1920 x 1080
Audio	Realtek Audio code Line-in, Mic-in, Line-out 6W Amplifier	N/A	Realtek Audio codec 2 x 2W Audio Amplifier	N/A
Ethernet	1 x Intel® I219LM 1 x Intel® I210AT 1 x Intel® X550-AT2 (BOM option)	2 x Intel® I226LM/IT	2 x Intel® I226LM	1 x Intel® I210AT/IT
USB/SATA/COM/LAN	14/4/6/4 or 6	6/1/2/2	6/1/6/2	6/0/1/1
Power Requirement	+12V/+5V/5VSB/+3.3V/-12V	+12V	+12V	+12V
Power Type	AT/ATX	AT/ATX	ATX	AT/ ATX
Operating Temp.	0°C ~ 60°C (32°F ~ 140°F)	0 ~ 60 °C (32 ~ 140 °F) -20 ~ 60°C (-8 ~ 140°F) - For wide temperature CPU SKU	0 ~ 60 °C (32 ~ 140 °F)	0 ~ 60 °C (32 ~ 140 °F) -20 ~ 60°C (-8 ~ 140°F) - For wide temperature CPU SKU
Dimension (L x W)	9.6" x 9.6" (243.84 mm x 243.84 mm)	3.93" x 2.83" (100 mm x 72 mm)	3.93" x 2.83" (100 mm x 72 mm)	3.3" x 2.5" (85 mm x 65 mm)
Weight	1.35 lbs (0.6 kg)	0.88 lbs (0.4 Kg)	0.88 lbs (0.4 Kg)	0.66 lbs (0.3 Kg)

COM Express



Model Number	ESM-APLM	ESM-EHLC	ESM-APLC	ESM-BYT2	ESM-KBLU
Processor	Intel® Celeron®/ Pentium®/ Atom™ SoC Processor	Intel® Atom® x6000E Series and Intel® Pentium® and Celeron® J and N Series processors	Intel® Pentium®/Celeron®/ Atom™ SoC Processor	Intel® Atom™/Celeron® processor	7th Gen Intel® Core™ i7/i5/i3/Celeron® processor
System Memory	1 x 204-pin DDR3L 1600/1333MHz SO-DIMM up to 8GB	2 x 260-pin DDR4 3200MHz SO-DIMM supports up to 32GB (Only Atom® x6000 Series Processors support IBCECC)	1 x 204-pin DDR3L 1600MHz 1600/1333MHz SO-DIMM up to 8GB	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)	2 x 260-pin DDR4 2133MHz SO-DIMM up to 32 GB
Expansion	1 x PCIe4	3 x PCIe1	3 x PCIe1	3 x PCIe1	8 x PCIe1
USB	6 x USB 2.0 2 x USB 3.0	8 x USB 2.0 4 x USB 3.2 Gen2x1 (10 Gbps)	8 x USB 2.0 4 x USB 3.0	7 x USB 2.0 1 x USB 3.0	8 x USB 2.0 4 x USB 3.0
SATA	2 x SATA III	2 x SATA III	2 x SATA III	2 x SATA II	3 x SATA III
COM Port	N/A	2 x UART	1 x UART	2 x UART	2 x UART
MIO	1 x SMBus 1 x LPC	1 x SMBus 1 x LPC/eSPI(default) 1 x I²C 1 x SPI	1 x SMBus 1 x LPC 1 x I²C	1 x SMBus 1 x LPC 1 x I²C	1 x SMBus 1 x LPC 1 x I²C 1 x SPI
Display Chipset	Intel® HD Graphics 500	Intel® UHD Graphics for 10th Gen Intel® Processors	Intel® HD Graphics 500	Intel® HD Graphics	Intel® HD Graphics 620 (i7-7600U, i5-7300U, i3-7100U), Intel® HD Graphics 610 (Celeron 3965U)
Display	LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI
Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio
Ethernet	1 x Intel® I210AT	1 x Intel® I225LM/IT	1 x Intel® I210AT	1 x Intel® I210AT	1 x Intel® I219LM
Power Requirement	+4.75V ~ +20V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F) (Standard) Extend: -40°C ~ 85°C (-40°F ~ 185°F) with 0.5m/s air flow. (Note: Above 70°C Tc, the recommended ethernet speed is 1G.) on request	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)	3.31" x 2.17" (84mm x 55mm)	3.7" x 3.7" (95 mm x 95 mm)	3.7" x 3.7" (95 mm x 95 mm)	3.7" x 3.7" (95 mm x 95 mm)	3.7" x 3.7" (95 mm x 95 mm)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B



Model Number	ESM-TGH	ESM-CFH	ESM-SKLH	ESM-BYT
Processor	11th Gen Intel® Xeon®/ Core™ i7/i5/i3 / Celeron® BGA 10nm Processor	9/8th Gen Intel® Xeon®/ Core™ i7/i5/i3 processor	6th Gen Intel® Core™ i7/i5/i3 processor	Intel® Atom™/Celeron® processor
System Memory	3x 260-pin DDR4-3200MHz SO-DIMM with up to 96 GB with ECC (ECC is supported with specific SKU) *3rd socket on rear side by request	3 x 260-pin DDR4 2400/2133MHz SO-DIMM up to 96 GB	2 x 260-pin DDR4 SO-DIMM up to 32GB	2 x 204-pin DDR3L 1066MHz SO-DIMM (for Bay trail-I E3826/E3825/E3815) or 204-pin DDR3L 1333MHz SO-DIMM up to 8 GB (E3845 & J1900 only support 1333MHz)
Expansion	1 PEGx16 (Gen4, 16.0 GT/s) support dGFX and NVMe Storage 8 PCIe1 (Gen3, 8.0 GT/s)	1 x PCIe x16 Gen3 8 x PCIe x1	8 x PCIe1	3 x PCIe1
USB	8 x USB 2.0 4 x USB 3.2 Gen2x1 (10Gbps)	8 x USB 2.0 4 x USB 3.1	8 x USB 2.0 4 x USB 3.0	7 x USB 2.0 1 x USB 3.0
SATA	4 x SATA III	4 x SATA III	4 x SATA III	2 x SATA II
COM Port	2 x UART	2 x UART	2 x UART	1 x UART
MIO	1 x SMBus 1 x LPC (eSPI default) 1 x I²C	1 x SMBus 1 x LPC 1 x I²C 1 x SPI	1 x SMBus 1 x LPC 1 x I²C	1 x SMBus 1 x LPC 1 x I²C
Display Chipset	Intel® 11th H series SoC Processor integrated	Intel® 8/9th SoC Processor integrated	Intel® 6th SoC Processor integrated	Intel® HD 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® I225LM/IT	1 x Intel® I219LM	1 x Intel® I219LM	1 x Intel® I210AT
Power Requirement	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F) (Standard) Extend: -40°C ~ 75°C (-40°F ~ 167°F) on request	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F) (Standard) Extend: -40°C ~ 85°C (-40°F ~ 185°F) on request
Dimension (L x W)	5" x 3.7" (125 mm x 95 mm)	5" x 3.7" (125 mm x 95 mm)	5" x 3.7" (125 mm x 95 mm)	5" x 3.7" (125 mm x 95 mm)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B



ARM-based SBC



Model Number	RSC-IMX8M	RSC-IMX61	ACP-IMX6POS	RSC-BCX6
Processor	NXP i.MX8M Cortex-A53 Quad Core 1.3GHz; Cortex-M4 core processor	NXP i.MX6 Dual Lite NXP i.MX6 Quad Core	NXP i.MX6 Dual Lite NXP i.MX6 Quad Core	NXP i.MX6 Solo
System Memory	1 GB DDR4 expandable to 2 GB	1 GB DDR3 expandable to 2 GB	1 GB DDR3 (Dual Lite) 2 GB DDR3 (Quad Core) expandable to 2 GB	512 MB DDR3 expandable to 1 GB
Storage	eMMC 16GB	eMMC 4 GB	eMMC 4 GB	N/A
External I/O Connector	1 x USB 3.0 Type A (Vertical type) 1 x USB 3.0 Type C 1 x Gigabit LAN 1 x HDMI (Vertical type) 1 x Micro SD socket 1 x Hand Phone 1 x Reset 1 x Power LED (Green)	1 x USB2.0 Type A 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 (RJ45 x 1) 1 x HDMI Connector (Vertical Type) 1 x Mini USB Connector 1 x RJ11 Connector for Cash Drawer 2 x DB9 Male Connector (COM 1 & 2 can be select from RS232/422/485) 1 x DC 12V Power Input by Power DC Jack 1 x Micro SD socket	1 x Line-Out 2 x USB 2.0 1 x Micro USB Connector (USB OTG) 1 x HDMI 1 x RJ-45 1 x Barrel Type Connector 1 x DC-in Jack
Internal I/O Connector	1 x Front Panel 2 x MIPI CSI, 1 x MIPI DSI 1 x DC in 1 x LVDS, 1 x Black Light 1 x I ² C, 1 x USB 2 x M.2 socket 1 x SIM Socket 1 x Extend connector	1 x USB2.0, 1 x USB OTG 1 x 2x5 GPIO, 1 x LVDS 24bit x2 1 x Backlight control 1 x Line-out, speaker-out Mic-in, 1 x Mini-PCIe (half size) 1 x I ² C, 1 x SATA (i.MX6 Quad only) 1 x Battery connector for RTC 1 x debug port, 1 x RS232	2 x RS232, 1 x debug port 1 x LVDS 24bit x2, 1 x Backlight control 1 x VGA, 1 x I ² C 3 x USB pin header 1 x 5-wire Resistive Touch Interface 1 x Dual Channel 24-bit LVDS 1 x Stereo Speaker-out 1 x Mini PCIe (Full size) 1 x SIM Socket 1 x Front Panel Connector with Power Button & Indicate LED for Power & WIFI 1 x Battery connector for RTC	1 x LVDS, 1 x Backlight control 1 x USB 2.0, 1 x RS232 1 x 8 bits GPIO 1 x Front Panel, 1 x Battery connector for RTC 1 x I ² C, 1 x CAN Bus, 1 x Mic-in, 1 x Line-out (Optional) 1 x Micro SD socket 1 x Mini PCIe (Half size) 1 x SIM Socket
Power Requirement	12 ~ 24V DC input, Terminal block	12 ~ 26V DC input, 2.5mm DC Jack, typical 19V input With brownout detection or Powered LAN	12 ~ 24V DC input	5V DC input
Operating Temperature	-40°C ~ 85°C (-40°F ~ 185°F)	-20°C ~ 85°C (-4°F ~ 185°F)	A Version 0°C ~ 60°C (32°F ~ 140°F) B Version -20°C ~ 85°C (-4°F ~ 185°F)	0°C ~ 60°C (32°F ~ 140°F)
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)	-40°C ~ 85°C	-40°C ~ 85°C (-40°F ~ 185°F)	-20°C ~ 80°C (-4°F ~ 176°F)
Dimension (L x W)	146 mm x 102 mm	146 mm x 102 mm	175 mm x 110 mm	120 mm x 78 mm
Weight	0.15 kg	0.15 kg	0.16 kg	0.1 kg
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class A
Software Support	Android 9.0/ 10 Yocto 2.5	Android 4.4 / 6.0 Yocto 2.1	Android 4.4 Yocto 1.7	Android 4.3, 4.4 and 5.0 can be supported if upgraded to 1G DDR3 memory Linux Yocto 1.7



Qseven Module



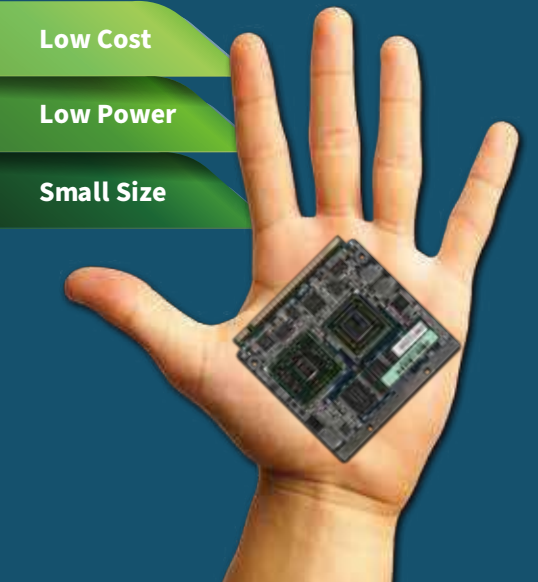
Model Number	E0M-APL	E0M-BYT
Processor	Intel® Pentium®/ Celeron® processor	Intel® Atom™/ Celeron® processor
System Memory	Onboard DDR3L 1600 & 1333MHz 4GB Up to 8GB	Onboard DDR3L 2GB up to 4 GB (Processor E3845 only support 1333MHz)
Expansion	3 x PCIe1	3 x PCIe1
USB	6 x USB 2.0, 2 x USB 3.0	5 x USB 2.0, 1 x USB 3.0
SATA	2 x SATA III	2 x SATA II
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
Display Chipset	Intel® HD Graphics 500	Intel® HD Graphics
Display	(HDMI or DP) + (eDP or LVDS)	DDI (HDMI or DP) + LVDS
Audio	Intel® High Definition Audio	Intel® High Definition Audio
Ethernet Chipset	1 x Intel® I210AT	1 x Intel® I211 (commercial)
Power Requirement	+5V	+5V
Others	N/A	N/A
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)
Dimension (L x W)	2.8" x 2.8" (70 mm x 70 mm)	2.8" x 2.8" (70 mm x 70 mm)
Certification	CE, FCC Class B	CE, FCC Class B
Software Support	Win 10 Linux Android	Win 10 Win 7 Win 8 Linux



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- High performance interfaces
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- Compact size
- Perfect for new low power chipsets & processors



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SMARC/ SMARC Eval Carrier Board



Model Number	SMA-X81	SMA-IMX6-E	REV-SA01	REV-SA02	REV-SA03
Processor	NXP i.MX 8M Mini	NXP i.MX 6 Dual NXP i.MX 6 Quad Core	N/A	N/A	N/A
System Memory	1GB DDR4 expandable to 2 GB	1GB DDR3 expandable to 2 GB	N/A	N/A	N/A
Storage	eMMC 16 GB	eMMC 8 GB	N/A	N/A	N/A
External I/O Connector	1 x USB 2.0 Port (One OTG) 3 x I ² C 1 x I ² S 1 x SPI 8 x GPIO 1 x UART 1 x MIPI CSI 1 x MIPI DSI 1 x LVDS 3 x PCIE 4 x USB 2.0 1 x Giga Lan	2 x USB 2.0 Port (One OTG) 2 x RX/TX (Ser1/3) 2 x UART (Ser0/2) 3 x PCIe1 1 x MLBI150 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	1 x HDMI 1 x VGA 2 x RJ45 1 x DB9 1 x Mini-USB 2 x USB Type A	1 x LAN 2 x RCA 1 x Micro SD socket 1 x Mini USB (OTG) 1 x USB Type A 2.0 double deck 1 x HDMI 1 x VGA 1 x Display port 2 x RS232 1 x RST Switch 1 x Power Switch 1 x Power LED 1 x DIP-SW	1 x Power Key 1 x Reset Key 1 x DC Jack 1 x USB 2.0 Type A 1 x USB Type C 1 x Giga Ethernet 1 x Headphone 1 x Micro SD Socket 1 x SIM Socket
Internal I/O Connector	N/A	N/A	1 x LVDS, 1 x Backlight 1 x SD Socket 1 x USB Connector 2 x CAN BUS 1 x Speaker-out/Mic-in 1 x RS-232, 1 x GPIO 1 x SATA, 1 x RTC Battery 1 x 2 Cell Li Battery Connector	1 x Camera, 2 x Speaker 1 x D-MIC, 1 x Mini PCIe (SATA) 1 x Mini PCIe (USB) 1 x Sim Card, 1 x GPIO 1 x I ² C, 1 x USB2.0 1 x PCIE-1, 1 x LVDS 1 x Battery charger connect 1 x Inverter, 2 x RS485, 2 x CAN	1 x USB 2.0 4P Header 1 x Mic Phone 2P Header 1 x Speaker 2P Header 1 x RTC-Battery (CR2032) 1 x M.2 key E for WIFI /BT 1 x M.2 key B for LTE 1 x M.2 key M for SSD 1 x BackLight 4P Header 1 x I2C Touch Screen connector 1 x MIPI DSI Screen connector 1 x MIPI CSI Screen connector 1 x LVDS Screen connector 1 x GPIO 16 bit 1 x CAN Bus
Power Requirement	12~24V	3V to 5.25V - Operates Directly from Single Level Lithium Ion Cells, or Fixed 3.3V or 5V Power Supplies	+9V ~ 36V DC-in (REV-SA01-02-A1R) +9V ~ 24V DC-in (REV-SA01-03-A1R)	DC +12V	DC +12V
Operating Temperature	Optional Commercial Temp.: 0°C ~ 85°C (32°F ~ 185°F) Industrial Temperature: -40°C ~ 85°C (-40°F ~ 185°F)	Optional Commercial Temp.: 0°C ~ 60°C (32°F ~ 140°F) Industrial Temperature: -40°C ~ 85°C (-40°F ~ 185°F)	0°C ~ 60°C (32°F ~ 140°F)	-40°C ~ 85°C (-40°F ~ 185°F)	-40°C ~ 85°C (-40°F ~ 185°F)
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)	-40°C ~ 85°C (-40°F ~ 185°F)	-20°C ~ 80°C (-40°F ~ 176°F)	-40°C ~ 85°C (-40°F ~ 185°F)	-40°C ~ 85°C (-40°F ~ 185°F)
Dimension (L x W)	82 mm x 50 mm	82 mm x 50 mm	146 mm x 101 mm	170 mm x 170 mm	165 mm x 120 mm
Weight	0.06 kg	0.06 kg	0.13 kg	0.024 kg	0.024 kg
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B
Software Support	Android 9.0 Yocto 2.5	Android 4.4 Yocto 2.1	N/A	N/A	N/A

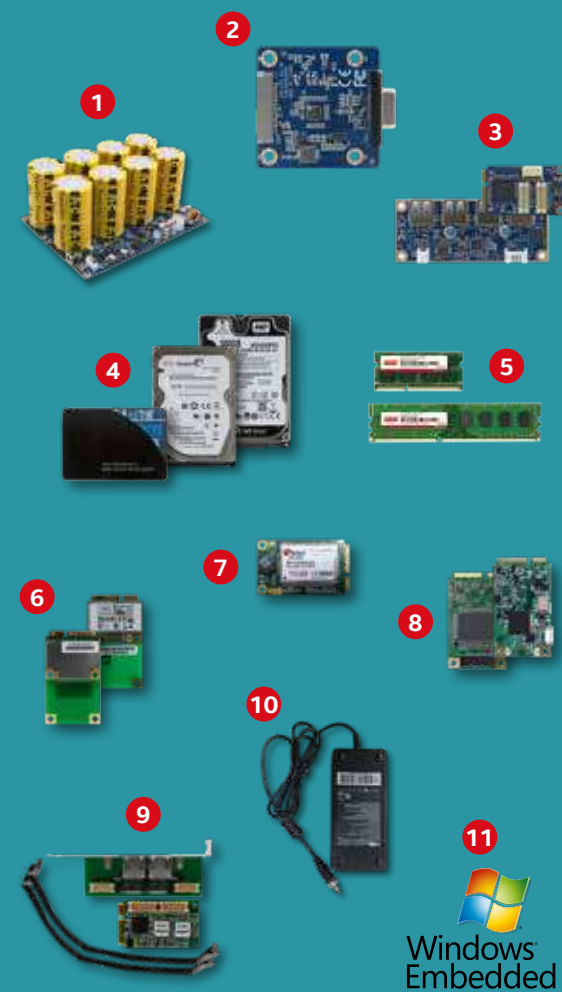


Qseven Carrier Board/ Eval Carrier Board



Model Number	REV-0703 (A/B)	EEV-EX16-B1	EEV-EX15	EEV-EX14
USB	4 x USB 2.0, 2 x USB 3.0 (2 x USB on board, 2 x USB 3.0/ 1 x USB external)	4 x USB 2.0, 4 USB 3.2 (Gen2/10Gbps)	8 x USB 2.0, 2 x USB 3.0 (2 USB External)	8 x USB 2.0, 4 x USB 3.0 (4 USB External)
SATA	2 x SATA (On board)	4 x SATA III (On Board)	2 x SATA III (On Board)	4 x SATA II (On Board)
COM Port	1 x RS-232	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	1 x HDMI, 1 x LVDS, 1 x DP, 1 x eDP (1 x LVDS & 1 x eDP on board)	3 x Display Port 1 x VGA, 3 x HDMI 1 x LVDS (1 x LVDS on board) 1 x eDP	1 x Display Port 1 x HDMI 1 x LVDS (1 x LVDS on board)	1 x Display Port 1 x VGA 1 x HDMI 1 x LVDS (1 x LVDS on board)
Other	External I/O Connector 1 x Ethernet, 1 x SD socket 3 x Audio phone jack Internal I/O connector 1 x GPIO, 1 x PCIe x1 1 x mPCIe, 1 x SPI 1 x CAN, 1 x LPC 1 x JFP (Miscellaneous Setting Connector) 1 x PWM CPU Fan Header 1 x PWR Header	1 x SDIO 1 x LAN (support 2.5G)	1 x LAN	1 x PS2/ KB & MS 1 x SDIO 2 x LAN
DIO	1 x 16 bit GPIO	1 x 8bit GPIO	1 x 8bit GPIO	1 x 8bit GPIO
MIO	1 x SD socket for version A 1 x Micro SD socket for version B	N/A	N/A	1 x IrDA
Expansion	1 x Mini PCIe Supports SIM Card	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/ WM8962	ALC888	ALC892	ALC892
Audio Interface	Mic-In, Line-In, Line-Out	Mic-In and Line-Out	Mic-In and Line-Out	Mic-In, Line-In and Line-Out
Power Requirement	DC +12V	ATX	ATX	AT/ATX
Operating Temperature	-40°C ~ 85°C (-40°F ~ 185°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	6.69" x 6.69" (170 mm x 170 mm)	9.6" x 9.6" (243.84 mm x 243.84 mm)	6.7" x 6.7" (170 mm x 170 mm)	9.6" x 9.6" (243.84 mm x 243.84 mm)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B

Peripherals & Accessories



With a full line of products, Avalue peripherals can provide everything that you need to build a system or solution. If the item is not covered by our standard product offerings, our purchasing team can help source any part based on a customer's specified vendor and product.

In short, the ultimate goal of us is to provide customers the most efficient services, the best quality products, and the shortest shipment lead time.

Peripherals & Accessories		
No	Embedded Peripherals	Description
1	Power Board	EPM-1715 Super Cap Power Module
		EPM-1721 Railway 60W Power board
2	Display Board	EPM-1502 eDP to VGA converter
3	IO Board	EPM-1601 mPCIe to 4-RS-232 Module
		EPM-1602 mPCIe to 4-RS-422/485 Module
		EPM-1603 USB to 4-RS-232/422/485 Module
		EPM-1604 4 Port USB 2.0 Hub
		EPM-1605 USB to mPCIe Module
		EPM-1606 mPCIe to M.2 Transfer Board
		EPM-1607 M.2 2242/2260/2280 to 4-RS-232 Module
4	Industrial Storage	SSD: 2.5", mSATA, M.2, CFAST, CF, DOM
		HDD: 2.5", 3.5"
		M.2: 2242, 2280
5	Industrial Module	Type: SO-DIMM, Long-DIMM Capacity: Max. Up to 32GB Temperature: Standard or Industrial temperature
6	Wi-Fi Module	Form Factor: mPCIe/ M.2 Bluetooth supported
7	4G/ 5G Module	Type: 4G/ 5G Module Interface: mCPIE, M.2
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 Standard 7/8 Windows 10 IoT Enterprise Windows 11 IoT Enterprise



EPM-1502 eDP to VGA converter

- Input Interface 40pin eDP signal
- Output Interface DB-Sub VGA
- Industrial temperature (W/T temp. -40°C to 85°C) operation
- Support VESA and CEA timing standards up to 1920 x 1200 @ 60Hz



EPM-1601 mPCIe to 4-RS-232 Module

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



EPM-1602 mPCIe to 4-RS-422/485 Module

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



EPM-1603 USB to 4-RS-232/422/485 Module

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



EPM-1604 4-Port USB 2.0 Hub

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



EPM-1605 USB to mPCIe Module with USIM

- Input Interface USB 2.0
- Output Interface USB 2.0
- Operation temperature : 0 °C to 60°C
- 1 x USIM Slot expansion



EPM-1606 mPCIe to M.2 A/E key Transfer Board

- M.2 Wi-Fi & Bluetooth Module (PCIe and USB Base) to Mini PCIe Converter
- Support Windows, MAC and Linux
- Multiple plated-holes support M.2 type 2230 / 2242
- Operating temperature:-40 ~ 80°C



EPM-1607 M.2 2242/2260/2280 to 4-RS-232 Module

- Input Interface PCI-Express. 2.0
- Output Interface 4 x RS-232
- Support M.2 type 2242/2260/2280 plated-holes
- Industrial temperature (W/T temp. -40°C to 85°C) operation
- Support Ring Wake function (optional)



EPM-1608 M.2 2242/2260/2280 Dual 2.5 GbE LAN module

- 3-in-1 form factor 2280/2260/2242
- Ultrafast Transfer Speeds via 2-Native PCIe Lane
- Quickly adds two independent Gigabit Ethernet ports (with 2kV isolation) to embedded systems
- Supports Wake-on LAN ensures unhindered remoting



EPM-1715 Supercap Power Module

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



EPM-1721 Railway 60W Power board

- Input to output isolation 1500Vdc
- Output voltage 12Vdc
- Output current 5000mA
- Wide Temperature Range: -40°C ~ +85°C
- Wide DC Input: +9 ~ 36Vdc
- Over voltage and current Protection
- Certified with EN50155 and EN50121-3-2

Transportation

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



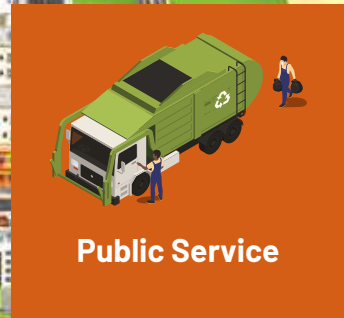
Wide Range of Product Series Selection
Domain Know-How in Transportation Market
Solution-Build Thinking
Dedicated Teams to Support

Transportation Product Highlights

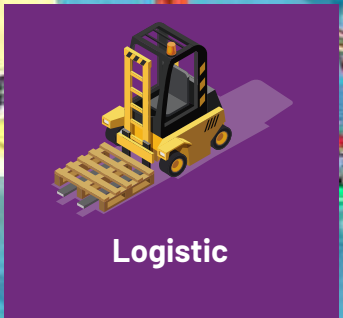
Application Layer			
Computing platform	Industrial-grade Monitor	E Ink	Ruggedized Tablet
	Ruggedized Box PC	Transportation System	Panel PC
Software layer	RENTY Sentinel 2 Remote Management Device	RENTY ARTEMIS Positioning System	Vehicle Power Management
	OS Build (Win/ Android/ Linux)	API/ SDK	Ignition Control



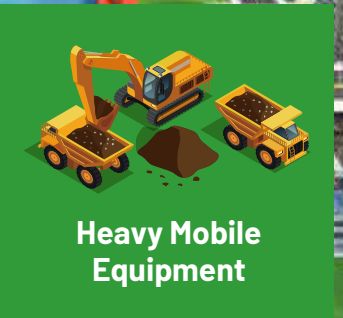
Public Transport



Public Service



Logistic



Heavy Mobile Equipment

Railway



Vehicle



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

Expandable Fanless System



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



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



EtherCAT Solution

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

Industrial Automation

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



Machine Vision Solution

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

Industrial Automation

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

Fanless Embedded System



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



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



Fanless Embedded System



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



ARM-based System/ Wireless Sensor Node



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

Model Number	ASN-NBIOT
Processor	STMicroelectronics STM32L-476ZGT6
Flash Memory	1MB Flash Memory
SRAM	128KB SRAM
LPWAN Module	Quectel BC95-G Support LTE Band : 1/3/5/8/20/28
GPS Module	Quectel L70B-M39
Indicate LED	LED for Power & NBIOT connection status Power: Green OK; Orange Charging; Red Lower battery NBIOT: Green Connected; Red Disconnected
Battery	1S2P 18650 Rechargeable Battery
External I/O Connector	1x IP65 M12 connector for power input and sensors I/O interface include with UART/SPI/I2C/ADC/DAC
Internal I/O Connector	Micro USB : Firmware update interface for STM32L476ZGT6 Micro SD : Micro SD socket for storage extension Micro Sim : Micro Sim socket for NBIOT JI01 : 20 Pins I/O interface for sensors, include with UART/SPI/I2C/ ADC signals Antenna 1 : Antenna connector for NBIOT module Antenna 2 : Antenna connector for GPS module
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)	38.7 mm x 94 mm x 148 mm
Weight	w/o Battery: 0.23 KG w/ Battery: 0.33 KG

High Performance Computing Solution

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



Time-to-solutions

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



IPMI 2.0 Supported

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



Extended Lifecycle

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

All standard models for High Performance Computing



Mainboard

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



Barebone System

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



Fully Integrated System

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

Healthcare

- Precision Diagnosis/ Life Science

Medical

- Advanced Medical Imaging Technology

Communication

- Superior Accelerated Workstation

Smart Manufacturing

- Visualization Machine Vision/ Transformative Analytics

Smart City

- Smart Public Safety and Enforcement Technology



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

High Performance Computing Solution



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



Barebone System

Desktop Chassis

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

Essential Professional Capabilities and Key Attributes



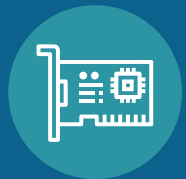
Configure to order



Flexible customer service



Multiple combination



PCIe Expansion



Rackmount System

Rackmount Chassis

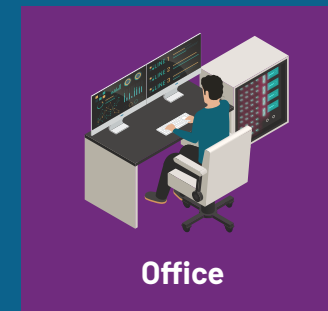
Avalue can provide several standard chassis including rackmount series such as 1U, 1U, 4U etc. for customer to choose. We offer many different features. Such as 5.25" bays allows user to install CDs, DVDs and drive bays as well as full length cards supported even at shortened depth for performance demanding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



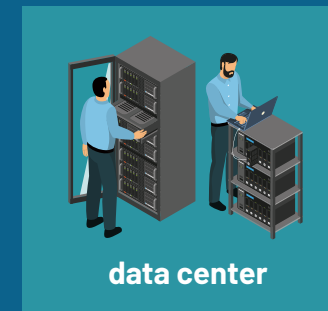
Medical



Smart Factory



Office



data center



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

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



Paper-Like



Always On



Sunlight Readable



Wide View Angle



Low Power Consumption

Avalue ePaper Solutions

Communication Board

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

EPD-42T/ EPD-4200



Digital Signage

- True flat front panel
- Outdoor/ indoor application
- Front cover class
- Optional open frame
- Optional PCAP touch
- Optional front light module
- LAN/ Wi-Fi/ LTE support
- Windows/ Android support

EPD-3133



EPD-2501



eNote

- Extremely thin and light
- High-contrast display
- Up to three weeks use on a single charge
- Convenient tool for writing, highlighting, erasing
- Familiar A4 size

ENT-13T1



Bedside Card

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

EBC-13V1/ EBC-05B1



Model Number	EPD-42T	EPD-4200	EPD-3133	EPD-2501	ENT-13T1	EBC-13V1	EBC-05B1
LCD Size	42"	42"	31.2"	25.3"	13.3"	13.3"	5.65"
Resolution	H: 2160 x V: 2880	H: 2160 x V: 2880	H: 2560 x V: 1440	H:3200x V:1800	H: 1650 x V: 2200	H: 2200 x V: 1650	H: 600 x V: 448
Viewing Angle	180 (U), 180 (D), 180 (L), 180 (R)	180 (U), 180 (D), 180 (L), 180 (R)	180 (U), 180 (D), 180 (L), 180 (R)	180 (U), 180 (D), 180 (L), 180 (R)	180 (U), 180 (D), 180 (L), 180 (R)	180 (U), 180 (D), 180 (L), 180 (R)	180 (U), 180 (D), 180 (L), 180 (R)
Touch Type	Projective Capacitive	Cover Lens only	Projective Capacitive	Cover Lens only	Projective Capacitive	Cover Lens only	Cover Lens only
Processor	NXP i.MX 7Dual Processor / Dual Arm® Cortex®-A7 Cores And Cortex-M4	none	Onboard Intel® Celeron® SoC BGA Processor N3350 (Apollo Lake Platform)	Onboard Intel® Celeron® SoC BGA Processor N3350 (Apollo Lake Platform)	881AP140A0-BTY2C012T404 (Cortex-A53 1.2GHz x 4 core)	Cortex-A53 1.2GHz x 4 core	MDBT500 - UIMV2 (nRF52840)
System Memory	On-Board 2GB DDR3L	none	1 x 204-Pin DDR3L 1866MTs SO-DIMM up to 8GB	1 x 204-Pin DDR3L 1866MTs SO-DIMM up to 8GB	2GB DDR3L	2GB LPDDR3	1MB flash / 256KB RAM
Wireless	M.2 Wi-Fi/ Bluetooth module (Optional)	none	mPCIe Wi-Fi/ Bluetooth module (Optional)	mPCIe Wi-Fi/ Bluetooth module (Optional)	Wi-Fi/ Bluetooth module	Wi-Fi/ Bluetooth module	BT 5.0
Storage	On-Board 8GB eMMC	none	2.5" SATA3 SSD 64GB	2.5" SATA3 SSD 64GB	16GB eMMC NAND Flash memory Approx. 10.86GB free storage	16GB eMMC NAND Flash	N/A
External I/O Connector	2 x USB 2.0 (Edge I/O) 1 x Micro USB for USB OTG 1 x RJ-45 connector for Gigabit Ethernet	1 x USB 1.1	4 x USB 3.1 (Gen1 5Gbps) 1 x DB-9 male connector for COM1 2 x RJ45 LAN port 2 x HDMI (1.4b): Max. Resolution 3840 x 2160 @ 30Hz	2 x HDMI 1 x COM 2 x LAN 4 x USB 3.1 (Gen1)	1 x USB	1 x Micro USB connector (USB2.0 / High-speed)	N/A
Power Requirement	DC +12V	DC+12V	DC +19V	DC+12V	Lithium-Ion polymer battery (2000mAh)	USB power/ 5V recharging (USB cable)	AAAA Alkaline batteries * 4
Power Type	AT	none	AT/ATX	AT/ATX	ATX	AT	AT
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 50°C (32°F ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0°C ~ 40°C (32°F ~ 104°F)	5°C to 35°C (41F to 95F)	5 ~ 35°C (41 ~ 95°F)	0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	0 ~ 40°C (32 ~ 104°F)	-10 ~ 55°C (14~ 131°F)	-20 ~ 60°C (-4 ~ 140°F)
Operating Humidity	40°C @ 95% Relative Humidity, Noncondensing	40°C @ 95% relative humidity, non-condensing	40°C @ 95% Relative Humidity, Noncondensing	40°C @ 90% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Noncondensing	40°C @ 95% Relative Humidity, Noncondensing	40°C @ 95% Relative Humidity, Non-condensing
Software Support	Android 5.1 (default)/ Linux 4.15 (Yocto 2.1)	none	Android 8.1 (default)/ Windows 10 IoT	Android 8.1 (default)/ Windows 10 IoT	Android 5.1	Android 5.1	Windows 10 IoT/ Linux
Dimension	918.8 x 704.6 x 37.6 mm	934.2 x 704.6 x 39 mm	750 x 445 x 36.7 mm	607 x 350 x 38.8mm	302.6 x 224 x 5.7 mm	302.6 x 224 x 5.7 mm	159 x 113 x 15 mm
Weight	7.5 kg	11.4kgs	7.2 kg	4.4 kg	0.352 kg	0.349 kg	0.152 kg
Certification	CE, FCC Class B	FCC Class B & CE (EN 55032 & 55035) ESD level 3	CE, FCC Class A	CE / FCC Class B	FCC, VCCI	FCC, VCCI	CE, FCC

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 provide for system users. A variety of external peripherals can be adapted to the docking areas of the terminals.



Security

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



Environmental

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

Model Number	HID-2100	HID-2132	HID-2138	HID-2334
LCD Size, Display Type	21.5", Full HD	21.5", Full HD	21.5", Full HD	23.8", 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	0.248 x 0.248	0.274 x 0.274
Luminance	250 cd/m ²	250 cd/m ²	250 cd/m ²	250 cd/m ²
Contrast Ratio	1000	1000	1000	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	22 ms	22 ms	22 ms	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 interface, EETI	USB interface, EETI
SBC	HID-2100 AD Board	ARC-SKLU	HID TGLP Mother Board	HID-2334 M/B + Charger board
Processor	-	6th Gen Intel® Core™ i7/i5/i3/Celeron processor	11th Gen Intel® Core™ i7/i5/i3/Celeron Processor	7th Generation Intel® Kaby Lake Core™ i7/i5/i3/ Celeron® Processor
I/O Chipset	-	EC ITE IT8528E	EC ITE IT8528E	EC ITE IT8518E
System Memory	-	1 x 260pin SODIMM socket up to 16GB DDR4 2133 SDRAM	2 x 260-pin DDR4 3200 MHz SO-DIMM socket up to 64GB Max	2 x 260pin SODIMM socket up to 32GB DDR4 2400 SDRAM
Expansion	-	1 x Full Size (support half size, Auto switch for mSATA, USB, PCIe signal)	Optional PCIe low profile card x1 Optional M.2 storage x1 Optional M.2 5G Module x1	1 x M.2 (Key E, 2230) with PCIe x1, CNVI and USB2.0 for Wireless 1 x mini PCIe with SATA or PCIeEx1, mSATA
Storage	-	1 x 2.5" SATA3 SSD	1 x M.2 Key-B 2242/3042/2260 for storage	1 x 2.5" SATA3 SSD
USB	2 x USB 2.0 1 x USB Type B	4 x USB 3.0, 2 x USB 2.0 by pin header 1 x USB 2.0 (Isolated 5KV)	2 x USB 2.0 2 x USB type C	4 x USB 3.0
COM Port	-	1 x RS-232/422/485, 1 x RS-232 1 x RS-232 (Isolated 5KV)	Optional	N/A
Other	HDMI input DP input VGA input DC output	Option 5.0M AF camera Optional Barcode Scanner Optional NFC Optional Handset	Option 5.0M AF camera Optional Barcode Scanner Optional NFC Optional Handset	Dual LED Reading Light Bar, I/O Cover Option for 2x 6900mAh hot swappable batteries and 4 slot charging bay Option for 5.0M auto focus camera with cover
Display Chipset	-	Intel® HD Graphics 520	Intel® 11th Generation CPU integrated	Intel® HD Graphics 620
Audio	RTD2525AR-CG integrated	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S
Audio Interface	Line-out, Mic-in, 2 x 2W Speaker	2 x 0.5W	Line-out, Mic-in, 2 x 2W Speaker	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 Gigabit Ethernet PHY 1 x Intel® I226LM Gigabit Ethernet PHY	1 x Intel® I211AT, 1 x Intel® I219LM
Adapter	AC/ DC power adapter Output: 120W Adapter (24V/5A Adapter)	AC/ DC medical power adapter Output: 90W Adapter (19V/4.74A Adapter)	AC/ DC medical power adapter Output: 120W Adapter (24V/5A Adapter)	AC/ DC medical power adapter Output: 120W Adapter (24V/5A Adapter)
Construction (Front, Rear)	Plastic, Plastic	Plastic, Plastic	Plastic, Plastic	Plastic, Plastic
Dimension	539.6 x 342.6 x 45.5 mm	539.6 x 342.6 x 45.2 mm	539.6 x 342.6 x 45.4 mm	380 x 587 x 45.5mm
Weight	5.3kg	6.2 kg	4.8 kg	6.9 kg (without batteries)
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 ~ 60°C (-4°F ~ 140°F)	-20°C ~ 60°C (-4°F ~ 140°F)	-10°C ~ 60°C (14°F ~ 140°F)	-30°C ~ 70°C (-22°F ~ 158°F)
Certification	CE, FCC Class B	CE, FCC Class B, UL60601-1 4th edition	CE, FCC Class B, UL60601-1	CE, FCC Class B, UL60601-1 4th edition
OS Information	-	Win 7/ 10/ Linux	Win 10/ Linux	Win 10/ Linux

Model Number	EPB-1001
SBC	EPB-1001 Battery Board
MCU	IT8911
Charger IC	LTC1760
Power IC	LTC3789 for Vout1
DC Input	24Vdc/ 5A
Charge Current	4A Max. for 2 batteries
Charge Voltage	16.8 V
Output Current Per Battery	6.8A
Output Voltage Per Battery	14.4V
Output Power	12/19V DC-out 80W
USB Port	Type A
Indicator Light	Power/ Battery1/ Battery 2
Power Connector	DC jack with lock
Power Type	DC in
Color	Black/ White
Dimension	235 x 182 x 43 mm
Weight	1.2 kg
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	-40°C ~ 75°C (-40 ~ 167°F) (Without Battery Pack)
Certification	CE/ FCC ANSI/ AAMI ES 60601 CAN/ CSA C22.2 No. 60601-1

Rugged Human Machine Interface



Model Number	ARC-1238	ARC-1538	ARC-21W38	ARC-1738-C1
LCD Size	12.1"	15"	21.5"	17"
Display Type	XGA	XGA	Full HD	SWGA
Resolution	1024 x 768	1024 x 768	1920 x 1080	1280 x 1024
Pixel Pitch	0.240 x 0.240 mm	0.297 x 0.297 mm	0.248 x 0.248	0.264 x 0.264
Luminance	600 cd/m ²	300 cd/m ²	250 cd/m ²	250 cd/m ²
Contrast Ratio	1000	2000	3000	1000
Viewing Angle	88 (U), 88 (D), 88 (L), 88 (R)	88 (U), 88 (D), 88 (L), 88 (R)	89 (U), 89 (D), 89 (L), 89 (R)	80 (U), 80 (D), 85 (L), 85 (R)
Response Time	11 ms	16 ms	20 ms	5 ms
Backlight	LED	LED	LED	LED
Touch Type	A Model: 5-Wire Resistive Touch B Model: Projective Capacitive Multi-Touch (Full Flat design)		Projective Capacitive	Projective Capacitive Multi-Touch (Full Flat design)
Touch Light Transmission	5-Wire Resistive Touch: 80%, Projective Capacitive Multi-Touch: 89%		88%	89%
Touch Controller	A Model: Onboard USB touch (PenMount); B Model: External USB controller		USB touch (EETI)	Onboard USB touch (iLITEK)
SBC	ARC-TGL		EMX-TGLC	
Processor	On board 11th Gen. Intel® Core™ i7/i5/i3/Celeron BGA Processor		On board 11th Gen. Intel® Core™ i7/i5/i3/Celeron BGA Processor	
I/O Chipset	EC (IT8528VG-I/FX)		EC (ITE IT8528E)	
System Memory	Single 260-pin DDR4 SODIMM Socket, Supports Up to 32GB DDR4 3200MTs SDRAM		2 x 260-pin DDR4 3200 MHz SO-DIMM socket, up to 64GB Max	
Expansion	1 x M.2 Key-E 2230 for Wi-Fi & BT Module 1 x M.2 Key-B 2242/3042/3052 for SATA3/PCIe x1/ USB3.1		1 x M.2 Key B 3042/3052/2242/2260/2280 for SATA/USB3.0/USB2.0, 1 x M.2 Key E 2230 support WiFi module	
Storage	1 x M.2 Key-B 2242/3042/3052 for SATA3/PCIe x1/ USB3.1 or 1 x 2.5" Drive Bay (7mm HDD Restricted)		1 x M.2 Key B 3042/3052/2242/2260/2280 Support 1xPCIe1/ SATA/USB3.0/USB2.0 or 1 x 2.5" Drive Bay	
USB	4 x USB 3.1 Gen.2		3 x USB3.1 Gen2, 1 x USB 3.1 Gen1, 3 x USB 2.0 (optional) *1 x USB2.0 for option shared the same port with COM	
COM Port	1 x RS-232/422/485, selectable by BIOS, RS-485 supports Auto Flow, Pin-9 selected by Ring/+5V/+12V); 1 x RS-232		COM1: 1 x RS232/422/485 (default); COM2: 1 x RS232/422/485 (optional); COM3: 1 x RS232 (optional) COM4-6: 3 x RS232/GPIO/USB 2.0 (optional)	
Other	5 x Knockouts for Antenna + 2 x antenna by IET bracket		6 x Knockouts for Antenna	
Display Chipset	Intel® 11th Generation CPU integrated		Intel® 11th Generation CPU integrated	
Display Resolution	HDMI: Max. resolution 4096 x 2160 @ 60Hz (optional by IET module)		2 x DP++: 1920 x 1080@60 Hz	
Audio	Realtek ALC897		Realtek ALC897 co-lay ALC888S & Tempo 92HD73	
Audio Interface	2 x 2W Speakers		2 x 5W Speakers	
Ethernet	1 x Intel® I219LM PCI-e Gigabit Ethernet, 1 x Intel® I225LM 2.5 Gigabit Ethernet		1 x Intel® I219LM Gigabit Ethernet PHY (LAN1), 1 x Intel® I226LM 2.5 Gigabit Ethernet (LAN2)	
Power Connector	Lockable DC Jack, +12 ~ 26V		Mini-DIN 4pin DC-in, +12~24V DC-in	
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: 120W adapter (24V @ 5A)	
Construction (Front, Rear)	A Model: Front Metal, Rear Aluminum Die Casting; B Model: Aluminum Die Casting		Front Aluminum Die Casting, Rear Aluminum Alloy	
Operating Temperature	-10°C ~ 50°C (14°F~122°F)		0°C ~ 50°C (32°F~122°F)	
Storage Temperature	-20°C ~ 60°C (-4°F~140°F)		-20°C ~ 60°C (-4°F~140°F)	
Certification	CE, FCC Class B		CE, FCC Class A, CCC	
OS Information	Windows 10, Linux		Windows 10, Linux, Windows 11 (optional)	
Dimension	284 x 223 x 46mm	350 x 274 x 53.1 mm	538.05 x 341.05 x 63.55 mm	393 x 325 x 72 mm
Weight	2.4Kg	3.7 Kg	7.3 Kg	4.4 Kg



Model Number	ARC-1235	ARC-1535	ARC-21W35	ARC-1037	ARC-10W37
LCD Size	12.1", 4:3	15", 4:3	21.5"	10.4", 4:3	10.1", 16:10
Display Type	XGA	XGA	Full HD	XGA	WXGA
Resolution	1024 x 768	1024 x 768	1920 x 1080	1024x768	1280 x 800
Pixel Pitch	0.240 x 0.240 mm	0.297 x 0.297 mm	0.248 x 0.248	0.0685mm (H) x 0.2055mm (V)	0.1695mm x 0.1695mm
Luminance	600 cd/m ²	300 cd/m ²	250 cd/m ²	500 cd/m ²	350 cd/m ²
Contrast Ratio	1000	2000	3000	1200	800
Viewing Angle	88 (U), 88 (D), 88 (L), 88 (R)	88 (U), 88 (D), 88 (L), 88 (R)	89 (U), 89 (D), 89 (L), 89 (R)	88 (U), 88 (D), 88 (L), 88 (R)	85 (U), 85 (D), 85 (L), 85 (R)
Response Time	11 ms	16 ms	20 ms	25 ms	25 ms
Backlight	LED	LED	LED	LED	LED
Touch Type	A Model: 5-Wire Resistive Touch B Model: Projective Capacitive Multi-Touch (Full Flat design)		Projective Capacitive	5-Wire Resistive Touch	Projective Capacitive
Touch Light Transmission	5-Wire Resistive Touch: 80%, Projective Capacitive Multi-Touch: 89%		88%	80%	88%
Touch Controller	A Model: Onboard USB touch (PenMount); B Model: External USB controller		USB touch (EETI)	Onboard USB touch (PenMount)	USB touch (EETI)
SBC	ARC-EHL		ARC-ADLN		
Processor	Onboard Intel® Pentium®/Celeron®/Atom™ SoC BGA Processor		Onboard Intel® Pentium®/Celeron®/Atom™ Alder Lake-N Processor		
I/O Chipset	EC ITE IT5571		EC ITE IT5782VG		
System Memory	Single 260-pin DDR4 SODIMM Socket, Supports Up to 32GB DDR4 3200MTs SDRAM		Single 262-pin DDR5 4800MHz SO-DIMM socket, supports up to 32GB Max (non ECC only)		
Expansion	1 x M.2 Key-E 2230 for Wi-Fi & BT Module 1 x M.2 Key-B 2242/3042/3052 for SATA3/ PCIe x1/ USB3.1		1 x M.2 Key-E 2230 for Wi-Fi & BT Module 1 x M.2 Key-B 2242/3042/3052 for SATA3/ PCIe x1/ USB3.1		
Storage	1 x M.2 Key-B 2242/3042/3052 for SATA3/ PCIe x1/ USB3.1 or 1 x 2.5" Drive Bay (7mm HDD Restricted)		1 x M.2 Key-B 2242/3042/3052 for SATA3/ PCIe x1/ USB3.1 or 1 x 2.5" Drive Bay (7mm HDD Restricted)		
USB	4 x USB 3.1 Gen.2		2 x USB3.1 Gen.2 (1 x Dual Deck, Type A) 1 x USB Type C (w/ PD, USB, Display function)		
COM Port	1 x RS-232/422/485, selectable by BIOS, RS-485 supports Auto Flow, Pin-9 selected by Ring/+5V/+12V); 1 x RS-232		1 x RS-232/422/485, selectable by BIOS, RS-485 supports Auto Flow, Pin-9 selected by Ring/+5V/+12V); 1 x RS-232		
Other	5 x Knockouts for Antenna + 2 x antenna by IET bracket		3 x Knockouts for Antenna Mounting		
Display Chipset	Intel® Elkhart Lake SoC Processor integrated Gen11 LP graphics		Intel® Alder Lake-N Processor integrated Gen 12 UHD Graphics		
Display Resolution	HDMI: Max. resolution 4096 x 2160 @ 60Hz (optional by IET module)		HDMI: Max. resolution 4096 x 2160 @ 60Hz (optional by IET module)		
Audio	Realtek ALC897		Realtek ALC897		
Audio Interface	2 x 2W Speakers		2 x 2W Speakers		
Ethernet	2 x Intel® I225-IT 2.5 Gigabit Ethernet (wide temperature)		2 x Intel® I226-LM 2.5 Gigabit Ethernet		
Power Connector	Lockable DC Jack, +12 ~ 26V		Lockable DC Jack, +12 ~ 24V		
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)	A Model: Front Metal, Rear Aluminum Die Casting; B Model: Aluminum Die Casting		Front Metal, Rear Aluminum Die Casting		Aluminum Die Casting
Operating Temperature	A Model: -20°C ~ 60°C (-4°F~140°F), B Model: -10°C ~ 50°C (14°F~122°F)		-10°C ~ 50°C (14°F ~ 122°F)		
Storage Temperature	-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	Windows 10, Linux		Windows 10, Windows 11, Linux		
Dimension	284 x 223 x 46 mm	350 x 274 x 53.1 mm	537.9 x 329.4 x 55.9 mm	259.6 x 195.8 x 46 mm	282.29 x 200.93 x 50.9 mm
Weight	2.4 Kg	3.7 Kg	7.3 Kg	2.3 kg	2.17 kg

Rugged Human Machine Interface



Model Number	ARC-1033	ARC-1533	ARC-10W33	ARC-15W33	ARC-21W33
LCD Size	10.4", 4:3	15", 4:3	10.1", 16:10	15.6", 16:9	21.5"
Display Type	XGA	XGA	WXGA	WXGA	Full HD
Resolution	1024x768	1024 x 768	1280 x 800	1366 x 768	1920 x 1080
Pixel Pitch	0.0685mm (H) x 0.2055mm (V)	0.297mm (H) x 0.297mm (V)	0.1695mm x 0.1695mm	0.252mm (H) x 0.252mm (V)	0.248 x 0.248
Luminance	500 cd/m ²	400 cd/m ²	350 cd/m ²	300 cd/m ²	250 cd/m ²
Contrast Ratio	1200	700	800	500	3000
Viewing Angle	88 (U), 88 (D), 88 (L), 88 (R)	70 (U), 70 (D), 80 (L), 80 (R)	85 (U), 85 (D), 85 (L), 85 (R)	80 (U), 80 (D), 80 (L), 80 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	25 ms	16 ms	25 ms	8 ms	18 ms
Backlight	LED	LED	LED	LED	LED
Touch Type	A Model: 5-Wire Resistive Touch B Model: Projective Capacitive Multi-Touch (Full Flat design)		Projective Capacitive	Projective Capacitive	Projective Capacitive
Touch Light Transmission	5-Wire Resistive Touch: 80%; Projective Capacitive Multi-Touch: 89%		88%	88%	89%
Touch Controller	A Model: Onboard USB touch (PenMount); B Model: EETI External USB controller		USB touch (EETI)	USB touch (EETI)	USB interface, EETI
SBC	ARC-APL		ARC-APL		
Processor	Onboard Intel® Apollo Lake-I/M processor		Intel® Celeron® N3350/J3455 Processor		
I/O Chipset	EC ITE IT8528E		EC ITE IT8528E		
System Memory	1x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB		1x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB		
Expansion	1x Mini PCIe Supports mSATA, 1x Optional 80-pin Expansion		1x Mini PCIe Supports mSATA, 1x Optional 80-pin Expansion		
Storage	1x 2.5" Drive Bay (7mm HDD Restricted)		1x 2.5" Drive Bay (7mm HDD Restricted)		
USB	4 x USB 3.0		4 x USB 3.0		
COM Port	1x RS-232/422/485 (Factory Optional), 1x RS-232		1x RS-232/422/485, 1x RS-232		
Other	1x WiFi (Option), 3 x Knockouts for Antenna Mounting		1x WiFi (Option), 3 x Knockouts for Antenna Mounting		
Display Chipset	Intel® Apollo Lake SoC Processor Integrated Gen9 LP graphics Supports optional dual display		Intel® HD Graphics 500		
Display Resolution	HDMI: Max. resolution 3840 x 2160 @ 30Hz (optional by IET module)		HDMI: Max. resolution 3840 x 2160 @ 30Hz (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® I210IT (Apollo Lake I), 2 x Intel® I211AT (Apollo Lake M)		2 x Intel® I211AT		
Power Connector	Lockable DC Jack, +9V ~ +36V		Lockable DC Jack, +9V ~ +36V		
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		Metal with cover lens, Black Diet Casting		
Operating Temperature	(N3350/N4200/J3455 CPU) -10°C ~ 50°C (14°F ~ 122°F) (E3900 CPU) -20°C ~ 60°C (-4°F ~ 140°F)		-10°C ~ 50°C (14°F ~ 122°F)		
Storage Temperature	(N3350/N4200/J3455 CPU) -20°C ~ 60°C (-4°F ~ 140°F) (E3900 CPU) -30°C ~ 70°C (-22°F ~ 158°F)		-20°C ~ 60°C (-4°F ~ 140°F)		
Certification	CE, FCC Class B		CE, FCC Class B		
OS Information	Win 10, Linux		Win 10, Linux		
Dimension	259.6 x 195.8 x 46 mm	350 x 274 x 53.1 mm	282.29 x 200.93 x 50.9 mm	391.2 x 239.2 x 57.5 mm	537.9 x 329.4 x 55.9 mm
Weight	1.67 kg	3.7 kg	2 kg	4 kg	7.3 kg

Expandable Panel PC



Model Number	FPC-08W29	FPC-10W09	FPC-1736
LCD Size	8"	10.1"	17"
Display Type	WSVGA	WSVGA	SWGA
Resolution	1024 x 600	1024 x 600	1280 x 1024
Pixel Pitch	0.1725mm (W) x 0.1656mm (H)	0.2175mm (W) x 0.2088mm (H)	0.264 x 0.264
Luminance	500 cd/m ²	350 cd/m ²	250 cd/m ²
Contrast Ratio	700	500	1000
Viewing Angle	70 (U), 75 (D), 75 (L), 75 (R)	70 (U), 70 (D), 70 (L), 70 (R)	80 (U), 80 (D), 85 (L), 85 (R)
Response Time	20 ms	20 ms	5 ms
Backlight	LED	LED	LED
Touch Type	5-Wire Resistive	5-Wire Resistive	Projective Capacitive Multi-Touch (Full Flat design)
Touch Light Transmission	80 %	80 %	89%
Touch Controller	Onboard USB touch (PenMount)	Onboard USB touch (PenMount)	Onboard USB touch (iLitek)
SBC	ECM-BYT	ECM-BYT	Mini-ITX H310
Processor	Intel® Atom™ E3845 4-Core 1.91GHz processor	Intel® Atom™ E3845 4-Core 1.91GHz processor	Intel® LGA1151 Socket Supports 8th/9th refresh Generation Core™ Pentium® /7/ /5/ /3 Processors (Max. TDP at 65W)
System Chipset	Intel® Valleyview SoC	Intel® Valleyview SoC	Intel® H310 Express Chip
I/O Chipset	Nuvoton W83627DHG-P	Nuvoton W83627DHG-P	ITE IT8786E-I
System Memory	1x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB	1x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB	2 x 260-pin DDR4 2133/2400/2666 MHz SO-DIMM socket, up to 64GB Max
Expansion	1x Mini PCIe Supports mSATA	1x Mini PCIe Supports mSATA	1x PCIe x4 slot (Option for 2 x PCI slot) 1x M.2 E-key slot, type-2230 with PCIe
Storage	1x CompactFlash Type I/II Socket (CF-SATA optional)	2.5" SSD/HDD or Type I/II CF card	1x M.2 M-key 2242 with SATA
I/O	3 x USB 2.0, 1x USB 3.0 1x RS-232/422/485, 1x RS-232	4 x USB 2.0, 1x USB 3.0 1x RS-232/422/485	4 x USB 3.0 4 x RS-232
Display Chipset	Intel® Valleyview SoC Integrated Graphics Supports dual display	Intel® Valleyview SoC Integrated Graphics Supports dual display	Intel® 8/9th Generation CPU integrated
Display Resolution	VGA: Max. resolution 2560x1080 @ 60Hz HDMI: Max. resolution 1920x1200 @ 60Hz	VGA: Max. resolution 2560x1080 @ 60Hz HDMI: Max. resolution 1920x1200 @ 60Hz	VGA: Max. resolution 2560x1080 @ 60Hz HDMI: Max. resolution 1920x1200 @ 60Hz
Audio	Realtek ALC892 Support 5.1-CH	Realtek ALC892 Support 5.1-CH	-
Ethernet	2 x Intel® I211AT	2 x Intel® I211AT	1 x Intel® I219-V Gigabit Ethernet, 1 x Intel® I225-V 2.5 Gigabit Ethernet
Power Type	AT/ATX (ATX is default setting), Lockable DC Jack, +12V ~ +26V (12V @ 5A Adapter)	AT/ATX (ATX is default setting), Lockable DC Jack, +12V ~ +26V (12V @ 5A Adapter)	AT/ATX (ATX is default setting), Lockable DC Jack, +12V ~ +24V (19V @ 6.32A Adapter)
Construction (Front, Rear)	Metal, Aluminum + Metal	Metal, Aluminum + Metal	Metal
Dimension	225 x 129 x 43.4 mm	300 x 195 x 56 mm	392.7 x 325.32 x 121.55 mm
Weight	1.27 Kg	1.50 Kg	7.5 Kg
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 45°C (32°F ~ 113°F)
Storage Temperature	-10°C ~ 50°C (14°F ~ 122°F)	-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	CE, FCC Class A, CCC
OS Information	Win 7, Win 8, Linux, Win10	Win 7, Win 8, Linux, Win10	Windows 10, Linux

Open Frame Monitor/ Industrial Monitor



Model Number	OFM-15W00	OFM-21W00
LCD Size	15.6", 16:9	21.5", 16:9
Display Type	Full HD	Full HD
Resolution	1920 x 1080	1920 x 1080
Pixel Pitch	0.17925(H) x 0.17925(V)	0.24795(H) x 0.24795(V)
Luminance	220 cd/m ²	250 cd/m ²
Contrast Ratio	800	2000
Viewing Angle	85 (U), 85 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	30 ms	35 ms
Backlight	LED	LED
Touch Type	Projective Capacitive Multi-Touch supports up to 10 points	Projective Capacitive Multi-Touch supports up to 10 points
Touch Light Transmission	89 %	89 %
Touch Controller	USB Type (EETI)	USB Type (EETI)
Input Connector	HDMI, Display Port, VGA, USB Type B for Touch Function, OSD Keys	HDMI, Display Port, VGA, USB Type B for Touch Function, OSD Keys
Power Connector	DC Jack (Option for Phoenix connector)	DC Jack (Option for Phoenix connector)
Power Type	+12V DC in (option for 9~36V DC in)	+12V DC in (option for 9~36V DC in)
Adapter	By Option	By Option
Construction (Front, Rear)	Metal	Metal
Option Features	Support WIFI6 Media Server function Bi-direction image transfer and USB signal Available Panel mount kits, Wall mount kits by option	Support WIFI6 Media Server function Bi-direction image transfer and USB signal Available Panel mount kits, Wall mount kits by option
Dimension	387 x 235 x 46 mm	501.9 x 294.2 x 53.4 mm
Weight	2.5 kg	4.1 kg
Operating Temperature	0°C ~ 45°C (32°F ~ 113°F)	0°C ~ 45°C (32°F ~ 113°F)
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)	-20°C ~ 60°C (-4°F ~ 140°F)



Model Number	ARC-10W00	ARC-1200	ARC-1500	ARC-15W00	ARC-1700	ARC-21W00
LCD Size	10.1"	12.1"	15"	15.6"	17"	21.5"
Display Type	WXGA	XGA	XGA	WXGA	SXGA	FHD
Resolution	1280 x 800	1024 x 768	1024 x 768	1366 x 768 (Optional for 1920 x 1080)	1280 x 1024	1920 x 1080
Pixel Pitch	0.1695 x 0.1695 mm	0.240 x 0.240 mm	0.297 x 0.297 mm	0.252 x 0.252 mm	0.264 x 0.264 mm	0.24795 x 0.24795
Luminance	350 cd/m ²	600 cd/m ²	300 cd/m ²	300 cd/m ²	350 cd/m ²	250 cd/m ²
Contrast Ratio	800	1000	2000	500	800	3000
Viewing Angle	85 (U), 85 (D), 85 (L), 85 (R)	88 (U), 88 (D), 88 (L), 88 (R)	88 (U), 88 (D), 88 (L), 88 (R)	80 (U), 80 (D), 80 (L), 80 (R)	60 (U), 88 (D), 88 (L), 88 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	25 ms	11 ms	16 ms	8 ms	30 ms	25 ms
Backlight	LED	LED	LED	LED	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
Touch Light Transmission	88%	88%	88%	88%	88%	88%
Touch Controller	USB Type	USB Type	USB Type	USB Type	USB Type	USB Type
Input Connector	HDMI, Display Port, VGA, USB Type B for Touch Function, OSD Keys, line In	HDMI, Display Port, VGA, USB Type B for Touch Function, OSD Keys, line In	HDMI, Display Port, VGA, USB Type B for Touch Function, OSD Keys, line In	HDMI, Display Port, VGA, USB Type B for Touch Function, OSD Keys, line In	HDMI, Display Port, VGA, USB Type B for Touch Function, OSD Keys, line In	HDMI, Display Port, VGA, USB Type B for Touch Function, OSD Keys, line In
Power Connector	DC Jack (Option for Phoenix connector)	DC Jack (Option for Phoenix connector)	DC Jack (Option for Phoenix connector)	DC Jack (Option for Phoenix connector)	DC Jack (Option for Phoenix connector)	DC Jack (Option for Phoenix connector)
Power Type	+12V DC in (option for 9~36V DC in)	+12V DC in (option for 9~36V DC in)	+12V DC in (option for 9~36V DC in)	+12V DC in (option for 9~36V DC in)	+12V DC in (option for 9~36V DC in)	+12V DC in (option for 9~36V DC in)
Adapter	input: 100 ~ 240Vac/ 50 ~ 60Hz/ Output: 60W Adapter (12V @ 5A Adapter)	input: 100 ~ 240Vac/ 50 ~ 60Hz/ Output: 60W Adapter (12V @ 5A Adapter)	input: 100 ~ 240Vac/ 50 ~ 60Hz/ Output: 60W Adapter (12V @ 5A Adapter)	input: 100 ~ 240Vac/ 50 ~ 60Hz/ Output: 60W Adapter (12V @ 5A 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)	Full Flat Die Casting with Cover Lens/ Metal Default with Panel mount kits	Full Flat Die Casting with Cover Lens/ Metal Default with Panel mount kits	Full Flat Die Casting with Cover Lens/ Metal Default with Panel mount kits	Full Flat Die Casting with Cover Lens/ Metal Default with Panel mount kits	Full Flat Die Casting with Cover Lens/ Metal Default with Panel mount kits	Full Flat Die Casting with Cover Lens/ Metal Default with Panel mount kits
Option Features	Support WIFI6 Media Server function Bi-direction image transfer and USB signal	Support WIFI6 Media Server function Bi-direction image transfer and USB signal	Support WIFI6 Media Server function Bi-direction image transfer and USB signal	Support WIFI6 Media Server function Bi-direction image transfer and USB signal	Support WIFI6 Media Server function Bi-direction image transfer and USB signal	Support WIFI6 Media Server function Bi-direction image transfer and USB signal
Dimension	282.36 x 201 x 61.4 mm	293.77 x 226.31 x 61.5 mm	350.5 x 274.5 x 63.5 mm	391.21 x 239.21 x 68 mm	392.72 x 325.32 x 70.25 mm	538.05 x 341.05 x 71 mm
Weight	2 kg	2.5 kg	3.7 kg	3.2 kg	4.6 kg	5.9 kg
Operating Temperature	-10°C ~ 50°C (14°F ~ 122°F)	-10°C ~ 50°C (14°F ~ 122°F), Option -20°C ~ 70°C	-10°C ~ 50°C (14°F ~ 122°F), Option -20°C ~ 70°C	-10°C ~ 50°C (14°F ~ 122°F), Option -20°C ~ 60°C	-10°C ~ 50°C (14°F ~ 122°F), Option -20°C ~ 70°C	-10°C ~ 50°C (14°F ~ 122°F)
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)	-20°C ~ 60°C (-4°F ~ 140°F), Option -30°C ~ 70°C	-20°C ~ 60°C (-4°F ~ 140°F), Option -30°C ~ 70°C	-20°C ~ 60°C (-4°F ~ 140°F), Option -30°C ~ 70°C	-20°C ~ 60°C (-4°F ~ 140°F), Option -30°C ~ 70°C	-20°C ~ 60°C (-4°F ~ 140°F)



Light Industrial Panel PC



Model Number	SID-10WR2	SID-21WR2	SID-10WR1	SID-15WR1	SID-21WR1
LCD Size	10.1"	21.5"	10.1"	15.6"	21.5"
Display Type	WXGA	Full HD	WXGA	Full HD	Full HD
Resolution	1280 x 800	1920 x 1080	1280 x 800	1920 x 1080	1920 x 1080
Pixel Pitch	0.1695 x 0.1695 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
Luminance	350 cd/m ²	250 cd/m ²	350 cd/m ²	220 cd/m ²	250 cd/m ²
Contrast Ratio	800	3000	800	800	3000
Viewing Angle	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)
Response Time	30ms	30ms	30ms	30ms	30ms
Backlight	LED	LED	LED	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
Touch Light Transmission	86%	86%	86%	85%	86%
SBC	ACP-RK3568	ACP-RK3568	ACP-RK3288	ACP-RK3288	ACP-RK3288
Processor	Rockchip RK3568 2.0GHz		Rockchip RK3288 1.6GHz		
I/O Chipset	Rockchip SoC Integrated		Rockchip SoC Integrated		
Memory	2GB DDR4 Memory on board		2GB DDR3L Memory on board		
Storage	32GB eMMC on board		16GB eMMC on board		
Graphics	ARM Mali-G52 GPU core		ARM Mali-T764 GPU core		
HDMI Resolution	HDMI up to 1080p @ 120Hz		HDMI up to 1080p @ 120Hz		
USB Port	2 x USB 3.0 (Type A)		2 x USB 2.0 (Type A)		
Serial Port	1 x RS-232		1 x RS-232		
Audio Interface	1 x Line-Out		1 x Line-Out		
Ethernet	1 x Gigabit Ethernet, 10/100/1000 Mbps		1 x Gigabit Ethernet, 10/100/1000 Mbps		
Wi-Fi	802.11 b/g/n Built-in		802.11 b/g/n Built-in		
Bluetooth	Bluetooth 4.0 Built-in		Bluetooth 4.0 Built-in		
Power Connector	DC-in jack, 12 ~ 24V DC Powered LAN optional	DC-in jack, 12 ~ 24V DC	DC-in jack, 12 ~ 24V DC Powered LAN optional	DC-in jack, 12 ~ 24V DC	DC-in jack, 12 ~ 24V DC
Power Type	AT/ATX (AT is default setting)		AT/ATX (AT is default setting)		
Adapter	Input: 100 ~ 240 Vac/50 ~ 60Hz; Output: 60W Adapter (12V @ 5A Adapter)		Input: 100 ~ 240 Vac/50 ~ 60Hz; Output: 60W Adapter (12V @ 5A Adapter)		
Construction/Color	Metal, Black		Metal, Black		
Mounting	VESA 75 x 75	VESA 100 x 100	VESA 75 x 75	VESA 100 x 100	VESA 100 x 100
Dimension	255.2 x 169.4 x 40.7 mm	509 x 304.8 x 51.3 mm	255.2 x 169.4 x 40.7 mm	391.2 x 239.2 x 48.1 mm	509 x 304.8 x 51.3 mm
Weight	1.36 kg	7.2 kg	1.36 kg	3.59 kg	7.2 kg
IP Rating	Front IP65		Front IP65		
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)		0°C ~ 40°C (32°F ~ 104°F)		
Operating Humidity	5% ~ 90% Relative Humidity, Non-Condensing		5% ~ 90% Relative Humidity, Non-Condensing		
Certification	CE, FCC Class B		CE, FCC Class B		
OS Information	Android 11		Linux Debian 9, Android 8.1		

Model Number	SID-10W03	SID-15W03	SID-21W03	SID-10W04	SID-15W04	SID-21W04
LCD Size	10.1"	15.6"	21.5"	10.1"	15.6"	21.5"
Display Type	WXGA	Full HD	Full HD	WXGA	Full HD	Full HD
Resolution	1280 x 800	1920 x 1080	1920 x 1080	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	0.1692 x 0.1692 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	350 cd/m ²	220 cd/m ²	250 cd/m ²
Contrast Ratio	800	800	3000	800	800	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)	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	30ms	30ms	30 ms	30ms	30ms
Backlight	LED	LED	LED	LED	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
Touch Light Transmission	86%	85%	86%	86%	85%	86%
SBC	ACP-CHT3	ACP-CHT3	ACP-CHT3	ACP-FRIAA	ACP-FRIAA	ACP-FRIAA
Processor	Intel® Atom™ x5-Z8350 1.44GHz			Intel Celeron J3455 1.5GHz		
I/O Chipset	Intel® Atom™ SoC Integrated			Intel Celeron Integrated		
Memory	2GB / 4GB DDR3L Memory on board			1 x 204 pin SO-DIMM DDR3L		
Storage	32GB / 64GB eMMC on board			32GB (eMMC) / M.2 3042 SSD		
Graphics	Intel® Gen8 HD Graphic core			Intel® HD Graphics 500		
HDMI Resolution	HDMI up to 1080p @ 60Hz			HDMI up to 1080p @ 60Hz		
USB Port	1 x USB 3.0 (Type A), 1 x USB 2.0 (Type A)			2 x USB 3.0 (Type A)		
Serial Port	1 x RS-232			1 x RS-232, 1 x RS-485		
Audio Interface	1 x Line-Out			1 x Line-Out		
Ethernet	1 x Fast Ethernet, 10/100 Mbps			1 x Gigabit Ethernet, 10/100/1000 Mbps		
Wi-Fi	802.11 b/g/n/ac Built-in			1 x M.2 2230 E-Key 802.11 a/b/g/n/ac Wireless LAN		
Bluetooth	Bluetooth 5.0 Built-in			Bluetooth 5.0		
Power Connector	DC-in jack, 12 ~ 24V DC			DC-in jack, 12 ~ 24V DC		
Power Type	AT/ATX (AT is default setting)			AT/ATX (AT is default setting)		
Adapter	Input: 100 ~ 240 Vac/50 ~ 60Hz; Output: 60W Adapter (12V @ 5A Adapter)			Input: 100 ~ 240 Vac/50 ~ 60Hz; Output: 60W Adapter (12V @ 5A Adapter)		
Construction/Color	Metal, Black			Metal, Black		
Mounting	VESA 75 x 75	VESA 100 x 100	VESA 100 x 100	VESA 75 x 75	VESA 100 x 100	VESA 100 x 100
Dimension	255.2 x 169.4 x 40.7 mm	391.2 x 239.2 x 48.1 mm	509 x 304.8 x 51.3 mm	258.8 x 182.8 x 49.6 mm	388.8 x 258.8 x 49.6 mm	533.3 x 329.3 x 56.6 mm
Weight	1.36 kg	3.59 kg	7.2 kg	1.36 kg	3.59 kg	7.2 kg
IP Rating	Front IP65			Front IP65		
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)			0°C ~ 40°C (32°F ~ 104°F)		
Operating Humidity	5% ~ 90% Relative Humidity, Non-Condensing			5% ~ 90% Relative Humidity, Non-Condensing		
Certification	CE, FCC Class B			CE, FCC Class B		
OS Information	Win 10 IoT, Linux Ubuntu 19.04			Win 10 IoT, Linux Ubuntu 20.04		

Light Industrial Panel PC



Model Number	APC-15WR2	APC-2132	APC-2138	APC-2334
LCD Size, Display Type	15.6", Full HD	21.5", Full HD	21.5", Full HD	23.8", Full HD
Resolution	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
Pixel Pitch	0.17925mm (H) x 0.17925mm (V)	0.248mm (H) x 0.248mm (V)	0.248mm (H) x 0.248mm (V)	274.5um (H) x 274.5um (V)
Luminance	400 cd/m ²	250 cd/m ²	250 cd/m ²	250 cd/m ²
Contrast Ratio	800	1000	1000	3000
Viewing Angle	85(U), 85(D), 85(L), 85(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	8 ms	22 ms	14 ms	16ms
Backlight	LED	LED	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive	Projective Capacitive	Projective Capacitive
Touch Light Transmission	≥ 87%	≥ 85%	≥ 85%	89%
Touch Controller	USB touch (ilitek)	USB touch (EETI)	USB touch (ACDC)	USB touch (EETI)
SBC	ACP-RK3568A	ARC-SKLU	EMX-TGLC	EMX-KBLUP
Processor	CPU Rockchip RK3568 Quad-core Cortex-A55 up to 2.0GHz	Intel® Core™ i7/ i5/ i3 / Celeron Processor	Intel® Core™ i7/ i5/ i3 / Celeron Processor	Intel® Core™ i7/ i5/ i3 / Celeron Processor
System Chipset	Rockchip	Intel® Skylake U SoC integrated	Intel® Tigerlake U SoC integrated	Intel® Kabylake U SoC integrated
I/O Chipset	N/A	EC ITE IT8528E	EC ITE IT8528E	EC ITE IT8528E
System Memory	2GB LPDDR4 up to 4GB	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	2 x 260-pin DDR4 3200 MHz SO-DIMM up to 64GB	2 x 260-pin DDR4 2400MHz SO-DIMM supports up to 32GB
Expansion	1 x M.2 Type A 3042 support LTE or SSD module	1 x Full Size (support half size, Auto switch for mSATA, USB, PCIe signal)	1 x M.2 Type B 3042/3052/2242/2260/ 2280; 1 x M.2 Key E 2230 support WiFi module	1 x M.2 2230
Storage	1 x eMMC(32GB); 1 x M.2 Type A 3042 support SSD module	1 x 2.5" SATA3 SSD	1 x 2.5" Drive Bay	1 x 2.5" Drive Bay
USB	2 x USB 3.0	4 x USB 3.0, 2 x USB 2.0 (by IET module)	3 x USB 3.1 Gen 2; 1 x USB 3.1 Gen 1	4 x USB 3.0
COM Port	1 x RS-232/485 (RJ45 Type)	1 x RS-232/422/485, 1 x RS-232	2 x RS-232/422/485	N/A
Display Chipset	Rockchip	Intel® Skylake SoC integrated Graphics Supports dual display	Intel® Tigerlake SoC integrated Graphics Supports dual display	Intel® Kabylake SoC integrated Graphics Supports dual display
Audio	Everest ES8388	Realtek ALC888S Support 5.1-CH	Realtek ALC897	Realtek ALC888S Support 5.1-CH
Audio Interface	1 x Line out, 1 x Mic in, 2 x Speaker	1 x Line out, 1 x Mic in (by IET module)	N/A	1 x Line out, 1 x Mic in
Ethernet	1 x Gigabit Ethernet	1 x Intel® I211AT; 1 x Intel® I219LM	1 x Intel® I219LM; 1 x Intel® I226LM	1 x Intel® I211AT; 1 x Intel® I219LM
Power Connector	DC Jack, +12V ~ +24V	Lockable DC Jack, +12V ~ +26V	Lockable Mini Din 4-pin, +12V ~ +24V	Lockable DC Jack, +12V ~ +24V
Power Type	AT	AT / ATX	AT/ATX	AT / ATX
Adapter	N/A	Input:100 ~ 240Vac/ 50 ~ 60Hz Output:72W Adapter (19V @ 3.78A Adapter)	Input:100 ~ 240Vac/ 50 ~ 60Hz Output:90W Adapter (24V @ 3.75A Adapter)	Input:100 ~ 240Vac/ 50 ~ 60Hz Output:72W Adapter (19V @ 3.78A Adapter)
Construction (Front, Rear)	White Plastic	Plastic-black	Plastic-black	Plastic-black
Dimension	388.5 x 263 x 31.5 mm	539.6 x 342.6 x 45.5 mm	539.6 x 342.6 x 45.5 mm	592 x 382 x 49.5 mm
Weight	TBD	6.3 Kg	6.3 Kg	7.2 Kg
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	-10°C ~ 60°C (-14°F ~ 140°F)	-10°C ~ 60°C (14°F ~ 140°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	Android 11	Win 7, Win 8.1, Win 10, Linux	Win 10, Linux	Win 10, Linux



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

Light Industrial Panel PC



Model Number	VNS-10WR2	VNS-10W01	VNS-15W01
LCD Size	10.1"	10.1"	15.6"
Display Type	WXGA	WXGA	Full HD
Resolution	1280 x 800	1280 x 800	1920 x 1080
Pixel Pitch	0.1695 (H) x 0.1695 (V) mm	0.1695 (H) x 0.1695 (V) mm	0.17925 (H) x 0.17925 (V) mm
Luminance	350 cd/m ²	350 cd/m ²	220 cd/m ²
Contrast Ratio	800	800	500
Viewing Angle	85 (U), 85 (D), 85 (L), 85 (R)	85 (U), 85 (D), 85 (L), 85 (R)	20 (U), 45 (D), 45 (L), 45 (R)
Response Time	30ms	30ms	8ms
Backlight	LED	LED	LED
Touch Type	Projective Capacitive	Projective Capacitive	Projective Capacitive
Touch Light Transmission	86%	86%	86%
Touch Controller	USB interface	I ² C interface	USB interface
SBC	CPU Rockchip RK3568 Quad-core Cortex-A55 up to 2.0GHz	DNA 50	DNA 30
Processor	ROCKCHIP RK3568	Intel® Atom™ x5-Z8350: 2M Cache, up to 1.92 GHz	Intel® Atom™ x5-Z8350: 2M Cache, up to 1.92 GHz
System Chipset	Rockchip	Intel® Atom™	Intel® Atom™
System Memory	2GB LPDDR4 up to 4GB	2GB DDR3L RAM / option: 4GB for win 10 & Ubuntu 19.04	2GB DDR3L RAM / option: 4GB for win 10 & Ubuntu 19.04
Storage	1 x eMMC(32GB) 1 x M.2 Type A 3042 support SSD module	32GB eMMC / option: 64GB for win 10 & Ubuntu 19.04	32GB eMMC / option: 64GB for win 10 & Ubuntu 19.04
USB	2 x USB 3.0 Type A	2 x USB 2.0 Type A	2 x USB 2.0 Type A
COM Port	1 x RS-232/485 (RJ45 Type)	1 x RJ45 for RS232 or RS422 or RS485	1 x RJ45 for RS232 or RS422 or RS485
Other	Touch Button for Power/ Brightness/ Volume, 1 x 3.5mm Audio Jack, NFC, Cam 2.0 MP, LED indicating bar	Touch Button for Power/ Brightness/ Volume, 1 x 3.5mm Audio Jack, NFC, Cam 2.0 MP, LED indicating bar	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	Rockchip	Intel® HD Graphics 400	Intel® HD Graphics 400
Display Resolution	LVDS: Max. resolution 1280 x 800	LVDS: Max. resolution 1280 x 800	LVDS: Max. resolution 1280 x 800
Audio	Everest ES8388	Realtek ALC 5645	Realtek ALC 5645
Audio Interface	1 x Line out, 1 x Mic in, 2 x Speaker	Mic-In and Line-Out, 2 x 2W Speaker Output	Mic-In and Line-Out, 2 x 2W Speaker Output
Ethernet	1 x Gigabit Ethernet	Realtek RTL8111H-CG	Realtek RTL8111H-CG
Power Connector	DC Jack+12~24V DC in / Powered LAN	DC Jack+12~24V DC in / Powered LAN	DC Jack+12~24V DC in / Powered LAN
Power Type	AT	AT	AT
Adapter	N/A	Input: 100 ~ 240 Vac / 50~ 60Hz; Output: 60W Adapter (12V / 5A Adapter)	Input: 100 ~ 240 Vac / 50~ 60Hz; Output: 60W Adapter (12V / 5A Adapter)
Construction	White Plastic w/ antibacterial	White Plastic w/ antibacterial	White Plastic w/ antibacterial
Dimension	270 x 193 x 28 mm	270 x 193 x 28 mm	410 x 269 x 38 mm
Weight	1.1 kg	1.1 kg	2.5 kg
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B

ARM-based Panel PC



Model Number	CCD-07WR2	CCD-10WR2
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	ACP-HR170	ACP-HR170
Processor	Rockchip RK3568 Quad-Core ARM Cortex-A55, up to 2.0GHz	
I/O Chipset	Rockchip SoC Integrated	
Memory	2GB DDR4 Memory on board	
Storage	32GB eMMC on board	
Graphics	ARM G52 2EE	
HDMI Resolution	HDMI up to 1080p @ 30Hz	
USB Port	2 x USB 3.0 (Type A)	
Audio	1 x Line-Out, 2 x Speaker	
Other	1 x Camera, 1 x Microphone	
Ethernet	1 x Fast Ethernet, 10/100/1000 Mbps	
Wi-Fi	802.11 a/b/g/n/ac Built-in	
Bluetooth	Bluetooth 5.0 Built-in	
Power Connector	DC-in jack, 12 ~ 24V DC	
Power Type	AT	
Adapter	Input: 100 ~ 240 Vac/ 50 ~ 60Hz; Output: 50W Adapter (19V @ 2.1A Adapter)	
Construction/Color	Plastic, White	
Mounting	VESA 75 x 75	
Dimension	191 x 124 x 33 mm	261 x 181 x 34 mm
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	Linux, Android 11	

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

Stainless Steel Panel PC



Model Number	SPC-1533-B1	SPC-2133-B1
LCD Size	15", 4:3	21.5", 16:9
Display Type	XGA	Full HD
Resolution	1024 x 768	1920 x 1080
Pixel Pitch	0.297 x 0.297 mm	0.248 x 0.248 mm
Luminance	300 cd/m ²	250 cd/m ²
Contrast Ratio	2000	3000
Viewing Angle	88 (U), 88 (D), 88 (L), 88 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	16 ms	18 ms
Backlight	LED	LED
Touch Type	Projective Capacitive with Multi-Touch	Projective Capacitive with Multi-Touch
Touch Light Transmission	89%	89%
Touch Controller	USB (EETI)	USB (EETI)
SBC	EMX-APLP	EMX-APLP
Processor	Onboard Intel® Apollo Lake Processor	Onboard Intel® Apollo Lake Processor
I/O Chipset	ITE IT8528	ITE IT8528
System Memory	2 x 204-pin DDR3L 1600MTs up to 16GB	2 x 204-pin DDR3L 1600MTs up to 16GB
Expansion	1 x full size Mini PCI-e support mSATA (SATA III and mSATA By auto switch IC) with 1 x SIM card slot 1 x M.2 (2230) A-Key, support WiFi module	1 x full size Mini PCI-e support mSATA (SATA III and mSATA By auto switch IC) with 1 x SIM card slot 1 x M.2 (2230) A-Key, support WiFi module
Storage	1 x full size Mini PCI-e mSATA 1 x 2.5" SATA3 Drive Bay	1 x full size Mini PCI-e mSATA 1 x 2.5" SATA3 Drive Bay
USB	2 x M12 Connector (USB2.0)	2 x M12 Connector (USB2.0)
COM Port	1 x M12 Connector (RS232/422/485 by Jumper & BIOS Selection)	1 x M12 Connector (RS232/422/485 by Jumper & BIOS Selection)
Display Chipset	Intel® SoC integrated Graphics	Intel® SoC integrated Graphics
Audio	Realtek ALC 888S/897	Realtek ALC 888S/897
Audio Interface	N/A	N/A
Ethernet	1 x M2 Connector (1 x Intel® I211AT PCIe Gigabit Ethernet)	1 x M2 Connector (1 x Intel® I211AT PCIe Gigabit Ethernet)
Power Connector	1 x M12 DC Jack, +12~26V (Option for Phoenix Connector)	1 x M12 DC Jack, +12~26V (Option for Phoenix Connector)
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	Aluminum
Operating Temperature	-10°C ~ 50°C (-14°F ~ 122°F)	-10°C ~ 50°C (-14°F ~ 122°F)
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)	-20°C ~ 60°C (-4°F ~ 140°F)
Certification	CE, FCC Class A	CE, FCC Class A
OS Information	Window 10, Linux, Android x86 8.1	Window 10, Linux, Android x86 8.1
IP Rating	Full IP66, IP69K	Full IP66, IP69K
Dimension	393 x 315.8 x 49mm	562 x 365.8 x 49mm
Weight	5.7 kg	9.4 kg

Modular Design Concept
Operational Technology Oriented
Highly Customization
Physical Button

Modular Panel PC

OTC Series

- Various Types Processor
- Wide Range of Screen Size
- Customized Control Panel
- Various Types of Physical Button
- Option for Handle Design
- Water & Oil Resistance



Resistive Touch



PCAP Touch



Multiple Sizes



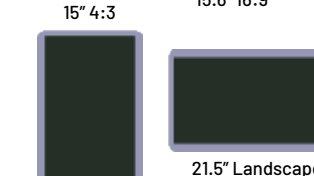
Rugged Design



Various Mounting

Modular Panel PC Are Separated Into 5 Different Areas:

A Main Screen



21.5" Portrait

21.5" Landscape

Selection For x86 Panel PC:

- Open Frame with Apollo Lake J3455/ Core I CPU
- Panel PC with Apollo Lake J3455/ Core I CPU

Selection For ARM Based Panel PC:

- Open Frame with Rockchip RK3288
- Selection For Touch Monitor:**
- Open Frame Monitor (OFM)
- Industrial Rugged Monitor (ARC)



* Dimension can be adjusted by customer request

B D Keyboard/ LCD/ EPaper/ Button



Crystal Acrylic Button

Transparent Button



Membrane Button

ABS Button



LCD Panel

epaper Display

C Expansion Ports/ NFC/ RFID



USB Expansion
NFC/ RFID

E Physical Button/ MPG Encoder



Manual Pulse Generator
(MPG) Encoder
Switch
Security Key
Handwheel



Emergency Stop Button
Physical On/Off Button
Meter



i-Face Designer

- 01 Quick Toolbar**
Small custom toolbar which can include more frequently used commands.
- 02 File Tab**
A file menu with functions for project management.
- 03 Screen Tab**
Quickly alternate between screens for editing.
- 04 Screen Manager**
Screen can be clicked on for editing, viewing, summarizing current content.
- 05 Screen Editing Area**
Edit the content of each screen in the project.
- 06 Sub-Window Shortcuts**
Quick commands to open or to close sub-windows.
- 07 Multi-language & Widget states**
Choose from multiple languages and control states to view and to edit.



- 08 Software Interface Settings**
Change the skins or languages for GUI.
- 09 Ribbon**
The ribbon contains multiple tabs with groups of functions for editing convenience and project management.
- 10 System Widget Library**
A rich and elaborate widget library for user to choose from.
- 11 User Widget Library**
User can also easily create a customized library of widgets.
- 12 Compiled Results**
Compilation error messages appear in this window so that user can quickly debug.
- 13 Zoom, Grid, and Coordinates**
Zoom in or out screens for perfect viewing. Grid and Coordinates for quickly and easily positioning of the widgets on screen.

Model Number	i-Face Designer (Software Solution)	
OS support	Windows 10, Linux Operating System for iFACE Editor: • Windows 7 – iFACE Designer 1.6.71 • Windows 10 64 bits – iFACE Designer 2.0.01 Operating System for iFACE Runtime: • Windows 10 • Ubuntu 16	
Widget Library	Built-in vector graphic widget library of refreshingly designed, easy to use widgets, elegant and stylish. Which contains the most-commonly used widgets such as push buttons, switches, lamps, meters, bars,... etc.	
Wide-coverage of Physical PLC Driver Database	PLC Drivers and industrial protocols	Support standard industrial communication protocols and mainstream PLC drivers just with simple selection and settings.
	CODESYS PLC Handler	Built-in PLCHandler for the communication between CODESYS Soft PLCs controller and HMI. CODESYS symbol .xml file import supported.
	PLC Pass Through	Create a tunnel for PC to directly monitor and control PLC, upload and download PLC program to PLC through HMI without extra connection.
Diversified Smart Functions	Macro	Powerful yet simple scripting language for data manipulation, data conversion, and data movement.
	Data Logger	High precision sampling time and adjustable data refresh rate. Support data with a max of 32 data fields each log.
	Scheduler	Automatic actions according to the pre-defined schedules to increase work efficiency.
	Program Simulation	Online and offline simulation to see how your application works with/without connection to controllers right on your PC.
	Statistics Charts	Display data logs with charts with a variety of line types and backgrounds.
	Trigger Action	According to the programmed conditions to trigger associated actions and alarms.
	Report	Data log backup can be further exported into reports in .txt, .csv, or .pdf formats.
	Recipe	Easy grouping parameters recipe. Each recipe data field can seamlessly link to widgets.
	VNC	Remote control and monitoring of HMI can be easily achieved through VNC connection.
	VPN	VPN enables all the remote control and monitoring across firewalls and networks via a secured tunnel.
	FTP	Data logs, historical alarm tables, recipes, screen captures, and HMI project can be remotely upload or download via FTP.
	MQTT	Support both MQTT (Message Queuing Telemetry Transport) server and client for message exchange between publisher and subscriber.
	RESTful API	Sends requests and receives responses in JSON format while avoiding security breaches with HTTPS encryption algorithm.
	OPC UA	Built-in OPC UA server and client for data exchange with standardized communication and interoperability.
	Line Notify	Alarm and event messages can be sent through Line Notify when the defined condition is met.
Online Upgrade	Support software version as well as PLC driver library online upgrade.	



iM-Connect Gateway



- iM-Connect Menu**
Contains the directory of each iM-Connect functions.
- Basic Settings**
The setup of PLC, tag, data logger, and alarm are identical to iFace Designer. Easy hands-on across two softwares without efforts.
- Gateway URL**
Enter the URL into the web browser to access the iM-Connect webpage.
- Advanced Settings**
Advanced functions including MQTT, Macro, OPCUA, Online Monitor, etc.
- Project Setting**
Novakon HMI is connected to customer's Power Quality Meter (PQM) System to acquire highly accurate measureme.
- System Setting**
HMI is connected to customer's Power Quality Meter (PQM) System to acquire highly accurate measureme.
- Funcion Setting Area**
HMI is connected to customer's Power Quality Meter (PQM) System to acquire highly accurate measureme
- System Status Bar**
View the current usage and remaining capacity of the system as well as runtime status, username and selected language.

Model Number	iM-Connect (Software Solution)	
OS support	Web-based Software (HTML5)	HTML5.
PLC support	PLC Driver Database and industrial protocols	Modbus RTU / Modbus TCP/IP/ CANOpen / BACnet Support standard industrial communication protocols and mainstream PLC drivers just with simple selection and settings.
	Codesys PLC Handler	Built-in PLCHandler for the communication between CODESYS Soft PLCs controller and Gateway. CODESYS symbol .xml file import supported.
Database & Cloud	Database Connection and Acquisition	MySQL / MS SQL / SQLite Data log can be pushed to Databases, such as MySQL, MS SQL, and SQLite when triggered by condition or at any given interval.
	Cloud Connection	Amazon AWS / Microsoft Azure / Google Cloud
Diversified Smart Functions	Programmable Marco	Based on JavaScript , it's a powerful yet simple tool for data manipulation, data conversion, and data movement.
	SECS / GEM (option)	SEMI E4 / E5 / E30 / E37 / PCBECI Different equipment data can be collected and converted to meet Semiconductor and PCB industry specific standard.
	MQTT Protocol	Broker / Client Support both MQTT (Message Queuing Telemetry Transport) server and client for message exchange between publisher and subscriber.
	RESTful API	Sends requests and receives responses in JSON format while avoiding security breaches with HTTPS encryption algorithm.
	OPC UA	Server / Client Built-in OPC UA server and client for data exchange with standardized communication and interoperability.
	Alarm Notification	Email / SMS /Line Alarm and event messages can be sent through Line Notify when the defined condition is met.
	Real-time Data Monitor	Remote control and monitoring of HMI can be easily achieved through VNC connection.
	Online Upgrade	Real-time monitor the current tag values and status from the controllers connected to gateway.
	Open VPN	VPN enables all the remote control and monitoring across firewalls and networks possible.
	User Management	Permission setting, Login with username and password. User can be set to two different security levels for different access: administrator (modified and view) or user (view only).
	USB File Back-up	Data log / Alarm History
	Data logger & Report Export	Data logging / Alarm History High precision sampling time and adjustable data refresh rate. Support data with a max of 32 data fields each log. Data log backup can be further exported into reports in.txt, .csv, or .pdf formats.
FTP	Server / Client Data log backup can be remotely upload or download via FTP.	

5-Wire Resistive Touch Series Panel Kits



Model Number	PCC-LPC-AB08-R	PCC-FPC-AB08-R	PCC-FPC-AB10-R	PCC-ARC-AB12-R
LCD Size	8", 4:3	8", 16:9	10.1", 16:9	12.1", 4:3
Display Type	SVGA	WVGA	WSVGA	XGA
LED driving Board	Panel Built-in	External board	Panel Built-in	Panel Built-in
Resolution	800x600	1024 x 600	1024 x 600	1024 x 768
Pixel Pitch	0.0675mm (H) x 0.2025mm (V)	0.1725 mm (W) x 0.1656 mm (H)	0.2175 mm (W) x 0.2088 mm (H)	0.240 mm (H) x 0.240 mm (V)
Luminance	500	500	350	600
Contract Ratio	500	700	500	1000
Viewing Angle	50(U), 70(D), 70(L), 70(R)	70 (U), 75 (D), 75 (L), 75 (R)	70 (U), 70 (D), 70 (L), 70 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	25 ms	20 ms	16 ms	11 ms
Touch light Transmission	80%	80%	80%	80%
Touch Controller	EETI	EETI	EETI	EETI
Touch Type	5W	5W	5W	5W
Interface	LVDS	LVDS	LVDS	LVDS
Operating Temperature	-10 to 70°C	-10 to 70°C	0 to 50°C	-10 to 70°C



Model Number	PCC-PPC-AB15-R	PCC-SPC-AB17-R	PCC-PPC-AB21-R	PCC-SPC-AB22-R
LCD Size	15", 4:3	17", 4:3	21.5", 16:9	22", 16:10
Display Type	XGA	SXGA	FHD	WSXGA
LED driving Board	Panel Built-in	Panel Built-in	External board	External board
Resolution	1024x768	1280x1024	1920x1080	1680x1050
Pixel Pitch	0.297mm (H) x 0.297mm (V)	0.264mm(H) x 0.264mm(V)	0.248mm (H) x 0.248mm (V)	0.282mm(H) x 0.282mm(V)
Luminance	300	350	250	250
Contract Ratio	2000	800	3000	1000
Viewing Angle	88(U), 88(D), 88(L), 88(R)	80 (U), 80 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)	80 (U), 80 (D), 85 (L), 85 (R)
Response Time	16 ms	30 ms	18 ms	5 ms
Touch light Transmission	80%	80%	80%	80%
Touch Controller	EETI	EETI	EETI	EETI
Touch Type	5W	5W	5W	5W
Interface	LVDS	LVDS	LVDS	LVDS
Operating Temperature	-10 to 70°C	-10 to 70°C	0 to 50°C	0 to 50°C

Projective Capacitive Touch Series Panel Kits



Model Number	PCC-OPF-AB07-C	PCC-ARC-AB10-C	PCC-ARC-AB12-C	PCC-ARC-AB15-C
LCD Size	7", 16:10	10.1" 16:10	12.1", 4:3	15", 4:3
Display Type	WXGA	WXGA	XGA	XGA
LED driving Board	Panel Built-in	Panel Built-in	Panel Built-in	Panel Built-in
Resolution	1280 x 800	1280x800	1024x768	1024 x 768
Pixel Pitch	0.03925 (H) x 0.11775 (V)	0.1695mm (H) x 0.1695mm (V)	0.240mm (H) x 0.240mm (V)	0.297mm (H) x 0.297mm (V)
Luminance	300	350	600	300
Contract Ratio	900	800	1000	2000
Viewing Angle	89 (U), 89 (D), 89 (L), 89 (R)	85 (U), 85 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)	88 (U), 88 (D), 88 (L), 88 (R)
Response Time	30 ms	25 ms	11 ms	16 ms
Touch light Transmission	89%	88%	89%	89%
Touch Controller	EETI	EETI	EETI	ILITEK
Touch Type	PCAP	PCAP	PCAP	PCAP
Interface	LVDS	LVDS	LVDS	LVDS
Operating Temperature	-20 to 70°C	-10 to 50°C	-20 to 70°C	-10 to 70°C



Model Number	PCC-ARC-AB15-C	PCC-ARC-AB15-C	PCC-ARC-AB17-C	PCC-ARC-AB21-C	PCC-APC-AB23-C
LCD Size	15.6", 16:9	15.6", 16:9	17", 4:3	21.5", 16:9	23.8", 16:9
Display Type	WXGA	FHD	SXGA	FHD	FHD
LED driving Board	Panel Built-in	Panel Built-in	Panel Built-in	External board	External board
Resolution	1366x768	1920x1080	1280x1024	1920x1080	1920x1080
Pixel Pitch	0.252mm (H) x 0.252mm (V)	0.17925 (H) x 0.17925 (V)	0.264mm (H) x 0.264mm (V)	0.24795mm (H) x 0.24795mm (V)	0.2745mm (H) x 0.2745mm (V)
Luminance	300	450	350	250	250
Contract Ratio	500	800	800	3000	1000
Viewing Angle	80 (U), 80 (D), 80 (L), 80 (R)	85 (U), 85 (D), 85 (L), 85 (R)	60 (U), 80 (D), 80 (L), 80 (R)	89 (U), 89 (D), 89 (L), 89 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	8 ms	13 ms	30 ms	20 ms	16 ms
Touch light Transmission	89%	85%	89%	89%	85%
Touch Controller	WEIDA	WEIDA	EETI	EETI	EETI
Touch Type	PCAP	PCAP	PCAP	PCAP	PCAP
Interface	LVDS	LVDS	LVDS	LVDS	LVDS
Operating Temperature	0 to 60°C	-20 to 70°C	-20 to 70°C	0 to 50°C	0 to 50°C



Open Frame Panel PC



Model Number	OFT-07WR1	OFT-10WR1	OFT-15WR1	OFT-21WR1
LCD Size	7"	10.1"	15.6"	21.5"
Resolution	800 x 1280	1280 x 800	1920 x 1080	1920 x 1080
Luminance	300	350 / 1000	220	250
Viewing Angle	160°(H/V)	170°(H/V)	170°(H/V)	178°
Touch Type	PCAP	PCAP	PCAP	PCAP
Processor	Rockchip RK3288	Rockchip RK3288	Rockchip RK3288	Rockchip RK3288
System Memory	2GB DDR3L RAM	2GB DDR3L RAM	2GB DDR3L RAM	2GB DDR3L RAM
Wireless	802.11 b/g/n Wireless LAN	802.11 b/g/n Wireless LAN	802.11 b/g/n Wireless LAN	802.11 b/g/n Wireless LAN
Storage	16G eMMC	16G eMMC	16G eMMC	16G eMMC
External I/O Connector	1x Giga Ethernet 2x USB 2.0 type A connectors 1x HDMI 1.4a connector 1x Head phone jack 1x DC jack 1x Reset	1x Giga Ethernet 2x USB 2.0 type A connectors 1x HDMI 1.4a connector 1x Head phone jack 1x DC jack 1x Reset	1x Giga Ethernet 2x USB 2.0 type A connectors 1x HDMI 1.4a connector 1x Head phone jack 1x DC jack 1x Reset	1x Giga Ethernet 2x USB 2.0 type A connectors 1x HDMI 1.4a connector 1x Head phone jack 1x DC jack 1x Reset
Internal I/O Connector	1x LVDS interface, 1x MIPI interface 1x USB Touch interface, 1x i²C Touch interface 1x Micro USB client (Android only) 1x USB CAM_DMIC interface 1x RS232 (TX/RX), 1x RS485 1x GPIO (16bit) interface 1x Speaker interface 1x A-MIC interface 1x Micro SD slot 1x Touch button connector 1x i²C sensor interface 1x Debug connector 1x Battery charger connector 1x DC input 4-pin header 1x M.2 B-Key socket 1x RTC battery 1x Power button connector	1x LVDS interface, 1x MIPI interface 1x USB Touch interface, 1x i²C Touch interface 1x Micro USB client (Android only) 1x USB CAM_DMIC interface 1x RS232 (TX/RX), 1x RS485 1x GPIO (16bit) interface 1x Speaker interface 1x A-MIC interface 1x Micro SD slot 1x Touch button connector 1x i²C sensor interface 1x Debug connector 1x Battery charger connector 1x DC input 4-pin header 1x M.2 B-Key socket 1x RTC battery 1x Power button connector	1x LVDS interface 1x eDP interface 1x USB Touch interface 1x Micro USB client (Android only) 1x USB CAM_DMIC interface 1x USB OTG 1x RS232 (TX/RX), 1x RS485 1x GPIO (16bit) interface 1x Speaker interface 1x A-MIC interface 1x Micro SD slot 1x Touch button connector 1x i²C sensor interface 1x Debug connector 1x DC input 4-pin header 1x M.2 B-Key socket 1x RTC battery 1x Power button connector	1x LVDS interface 1x eDP interface 1x USB Touch interface 1x Micro USB client (Android only) 1x USB CAM_DMIC interface 1x USB OTG 1x RS232 (TX/RX), 1x RS485 1x GPIO (16bit) interface 1x Speaker interface 1x A-MIC interface 1x Micro SD slot 1x Touch button connector 1x i²C sensor interface 1x Debug connector 1x DC input 4-pin header 1x M.2 B-Key socket 1x RTC battery 1x Power button connector
Power Requirement	DC 12 ~ 24V	DC 12 ~ 24V	DC 12 ~ 24V	DC 12 ~ 24V
Power Type	AT	AT	AT	AT
Operating Temperature	0°C ~ 40°C	0°C ~ 40°C	0°C ~ 40°C	0°C ~ 40°C
Storage Temperature	-20°C ~ 60°C	-20°C ~ 60°C	-20°C ~ 60°C	-20°C ~ 60°C
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing
Software Support	Android 8.1	Android 8.1	Android 8.1	Android 8.1
Dimension	115.9 x 183.1 x 33.4 mm	252 x 166 x 32.7 mm / 252 x 166 x 38.2 mm	387 x 235 x 35.3 mm	501.88 x 294.2 x 44.1 mm
Weight	0.45 kg	0.7 kg	1.5 kg	3.4 kg
Certification	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A



Model Number	OFT-07WR2	OFT-10WR2	OFT-21WR2
LCD Size	7"	10.1"	21.5"
Resolution	600 x 1024	800 x 1280	1920 x 1080
Luminance	350	350	250
Viewing Angle	170°(H/V)	160°(H/V)	178°
Touch Type	PCAP	PCAP	PCAP
Processor	Rockchip RK3568	Rockchip RK3568	Rockchip RK3568
System Memory	2GB DDR4 RAM	2GB DDR4 RAM	2GB DDR4 RAM
Wireless	802.11 a/b/g/n/ac Wireless LAN	802.11 a/b/g/n/ac Wireless LAN	802.11 a/b/g/n/ac Wireless LAN
Storage	32G eMMC	32G eMMC	32G eMMC
External I/O Connector	1x Giga Ethernet 2x USB 3.0 type A connectors 1x HDMI 1.4a connector 1x Head phone jack 1x DC jack 1x Reset	1x Giga Ethernet 2x USB 3.0 type A connectors 1x HDMI 1.4a connector 1x Head phone jack 1x DC jack 1x Reset	1x Giga Ethernet 2x USB 3.0 type A connectors 1x HDMI 1.4a connector 1x Head phone jack 1x DC jack 1x Reset
Internal I/O Connector	1x MIPI interface 1x USB Touch interface, 1x USB CAM_DMIC interface 2x RS232 (TX/RX), 1x RS485 1x GPIO (16bit) interface 1x Speaker interface 1x A-MIC interface 1x Micro SD slot 1x Touch button connector 1x i²C sensor interface 1x Debug connector 1x DC input 4-pin header 1x M.2 B-Key socket 1x RTC battery	1x MIPI interface 1x USB Touch interface, 1x USB CAM_DMIC interface 2x RS232 (TX/RX), 1x RS485 1x GPIO (16bit) interface 1x Speaker interface 1x A-MIC interface 1x Micro SD slot 1x Touch button connector 1x i²C sensor interface 1x Debug connector 1x DC input 4-pin header 1x M.2 B-Key socket 1x RTC battery	1x LVDS interface 1x USB Touch interface, 1x USB CAM_DMIC interface 2x RS232 (TX/RX), 1x RS485 1x GPIO (16bit) interface 1x Speaker interface 1x A-MIC interface 1x Micro SD slot 1x Touch button connector 1x i²C sensor interface 1x Debug connector 1x DC input 4-pin header 1x M.2 B-Key socket 1x RTC battery
Power Requirement	DC 12 ~ 24V	DC 12 ~ 24V	DC 12 ~ 24V
Power Type	AT	AT	AT
Operating Temperature	0°C ~ 40°C	0°C ~ 40°C	0°C ~ 40°C
Storage Temperature	-20°C ~ 60°C	-20°C ~ 60°C	-20°C ~ 60°C
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing
Software Support	Android 11	Android 11	Android 11
Dimension	190 x 130 x 31.8 mm	254 x 178 x 33.8 mm	515 x 322 x 44.9 mm
Weight	0.5 kg	0.7 kg	3.6 kg
Certification	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A

Open Frame Panel PC



Model Number	OFT-07W03	OFT-10W03	OFT-15W03	OFT-21W03	OFT-10W04	OFT-15W04	OFT-21W04
LCD Size	7"	10.1"	15.6"	21.5"	10.1"	15.6"	21.5"
Resolution	800 x 1280	1280 x 800	1920 x 1080	1920 x 1080	800 x 1280	1920 x 1080	1920 x 1080
Luminance	300	350	220	250	350	220	250
Viewing Angle	160° (H/V)	170° (H/V)	170° (H/V)	178°	170° (H/V)	170° (H/V)	178° (H/V)
Touch Type	PCAP	PCAP	PCAP	PCAP	P-CAP	P-CAP	P-CAP
Processor	Intel® Atom™ x5-Z8350: 2M Cache, up to 1.92 GHz	Intel® Atom™ x5-Z8350: 2M Cache, up to 1.92 GHz	Intel® Atom™ x5-Z8350: 2M Cache, up to 1.92 GHz	Intel® Atom™ x5-Z8350: 2M Cache, up to 1.92 GHz	Intel® Celeron® J3455 2M Cache 1.50 GHz	Intel® Celeron® J3455 2M Cache 1.50 GHz	Intel® Celeron® J3455 2M Cache 1.50 GHz
System Memory	2G / 4G DDR3L RAM	2G / 4G DDR3L RAM	2G / 4G DDR3L RAM	2G / 4G DDR3L RAM	1 x 204 pin SO-DIMM DDR3L 4GB	1 x 204 pin SO-DIMM DDR3L 4GB	1 x 204 pin SO-DIMM DDR3L 4GB
Wireless	802.11a/b/g/n/ac Wireless LAN	802.11a/b/g/n/ac Wireless LAN	802.11a/b/g/n/ac Wireless LAN	802.11a/b/g/n/ac Wireless LAN	802.11a/b/g/n/ac (2230)	802.11a/b/g/n/ac (2230)	802.11a/b/g/n/ac (2230)
Storage	32G / 64G eMMC	32G / 64G eMMC	32G / 64G eMMC	32G / 64G eMMC	32GB (eMMC) / M.2 3042 SSD	32GB (eMMC) / M.2 3042 SSD	32GB (eMMC) / M.2 3042 SSD
External I/O Connector	1x 10/100 Ethernet 1x USB 2.0/1x USB 3.0 type A connectors 1x HDMI 1.4a connector 1x Head phone jack 1x DC jack 1x Reset	1x 10/100 Ethernet 1x USB 2.0/1x USB 3.0 type A connectors 1x HDMI 1.4a connector 1x Head phone jack 1x DC jack 1x Reset	1x 10/100 Ethernet 1x USB 2.0/1x USB 3.0 type A connectors 1x HDMI 1.4a connector 1x Head phone jack 1x DC jack 1x Reset	1x 10/100 Ethernet 1x USB 2.0/1x USB 3.0 type A connectors 1x HDMI 1.4a connector 1x Head phone jack 1x DC jack 1x Reset	1x Giga LAN port 2x USB 3.0 1x HDMI 1x HP jack 1x DC jack 1x Power button	1x Giga LAN port 2x USB 3.0 1x HDMI 1x HP jack 1x DC jack 1x Power button	1x Giga LAN port 2x USB 3.0 1x HDMI 1x HP jack 1x DC jack 1x Power button
Internal I/O Connector	1x LVDS interface 1x USB Touch interface 1x I²C Touch interface 1x USB CAM_DMIC interface 1x RS232 (TX/RX), 1x RS485 1x GPIO's (16bit) interface 1x Speaker interface 1x A-MIC interface 1x Micro SD slot 1x Touch button connector 1x I²C sensor interface 1x Debug connector 1x DC-in wafer, 1x RTC battery 1x M.2 3042 B-Key socket 1x Power button connector	1x LVDS interface 1x USB Touch interface 1x I²C Touch interface 1x USB CAM_DMIC interface 1x Micro USB (Android only) 1x RS232 (TX/RX), 1x RS485 1x GPIO's (16bit) interface 1x Speaker interface 1x A-MIC interface 1x Micro SD slot 1x Touch button connector 1x I²C sensor interface 1x Debug connector 1x DC-in wafer, 1x RTC battery 1x M.2 3042 B-Key socket 1x Power button connector	1x eDP interface 1x USB Touch interface 1x I²C Touch interface 1x USB CAM_DMIC interface 1x Micro USB (Android only) 1x RS232 (TX/RX), 1x RS485 1x GPIO's (16bit) interface 1x Speaker interface 1x A-MIC interface 1x Micro SD slot 1x Touch button connector 1x I²C sensor interface 1x Debug connector 1x DC-in wafer, 1x RTC battery 1x M.2 3042 B-Key socket 1x Power button connector	1x LVDS interface 1x USB Touch interface 1x I²C Touch interface 1x USB CAM_DMIC interface 1x Micro USB (Android only) 1x RS232 (TX/RX), 1x RS485 1x GPIO's (16bit) interface 1x Speaker interface 1x A-MIC interface 1x Micro SD slot 1x Touch button connector 1x I²C sensor interface 1x Debug connector 1x DC-in wafer, 1x RTC battery 1x M.2 3042 B-Key socket 1x Power button connector	1x MIPI interface 1x Amic 1x USB 1x SPK 1x Touch button 1x RS485/RS232 1x RS232 1x DIO 1x Micro USB (Android only) 1x SD card slot 1x DC-in wafer 1x M.2 3042 B-Key (SSD or WWAN)	1x eDP interface 1x Amic 1x USB 1x SPK 1x Touch button 1x RS485/RS232 1x RS232 1x DIO 1x Micro USB (Android only) 1x SD card slot 1x DC-in wafer 1x M.2 3042 B-Key (SSD or WWAN)	1x LVDS interface 1x Amic 1x USB 1x SPK 1x Touch button 1x RS485/RS232 1x RS232 1x DIO 1x Micro USB (Android only) 1x SD card slot 1x DC-in wafer 1x M.2 3042 B-Key (SSD or WWAN)
Power Requirement	DC 12 ~ 24V	DC 12 ~ 24V	DC 12 ~ 24V	DC 12 ~ 24V	DC 12V~24V	DC 12V~24V	DC 12V~24V
Power Type	AT	AT	AT	AT	AT	AT	AT
Operating Temperature	0°C ~ 40°C	0°C ~ 40°C	0°C ~ 40°C	0°C ~ 40°C	0°C ~ 40°C	0°C ~ 40°C	0°C ~ 40°C
Storage Temperature	-20°C ~ 60°C	-20°C ~ 60°C	-20°C ~ 60°C	-20°C ~ 60°C	-20°C ~ 60°C	-20°C ~ 60°C	-20°C ~ 60°C
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing
Software Support	Win 10/ Ubuntu 19.04	Win 10/ Ubuntu 19.04	Win 10/ Ubuntu 19.04	Win 10/ Ubuntu 19.04	Win 10/ Ubuntu	Win 10/ Ubuntu	Win 10/ Ubuntu
Dimension	120 x 180 x 33.45 mm	252 x 166 x 32.7 mm	387 x 235 x 35.3 mm	501.88 x 294.2 x 44.1 mm	254 x 178 x 41.6 mm	384 x 254 x 47.5 mm	515 x 322 x 53.7 mm
Weight	0.5 kg	0.7 kg	1.5 kg	3.4 kg	1.28 kg	2.2 kg	4.3 kg
Certification	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A

Open Frame Panel PC



Model Number	OFT-07W33	OFT-15W33	OFT-21W33	OFP-15W38	OFP-21W38
LCD Size	7", 16:10	15.6", 16:9	21.5", 16:9	15.6", 16:9	21.5", 16:9
Resolution	1280 x 800	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
Luminance	300 cd/m ²	220 cd/m ²	250 cd/m ²	220 cd/m ²	250 cd/m ²
Viewing Angle	89 (U), 89 (D), 89 (L), 89 (R)	85 (U), 85 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)	85 (U), 85 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Touch Type	Projective Capacitive Multi-Touch supports up to 10 points			Projective Capacitive with Multi-Touch	
Processor	Onboard Intel® Celeron® N3350/J3455 SoC BGA Processor			Onboard Tiger Lake U 11th Intel® Core™ SoC i7/i5/i3 BGA Processor or Celeron® BGA Processor	
System Memory	4GB DDR3L Memory (Option up to 8GB by One SO-DIMM socket)	4GB DDR3L Memory (Option up to 16GB by Two SO-DIMM socket)	4GB DDR3L Memory (Option up to 16GB by Two SO-DIMM socket)	4GB DDR4 Memory (Option up to 64GB)	4GB DDR4 Memory (Option up to 64GB)
Wireless	Option by Mini PCIe : 802.11a/b/g/n/ac Wireless LAN and Bluetooth 4.0+			Option by M.2 WIFI/BT Module	
Storage	64GB mSATA by mPCIe Slot (Option for SATA interface 2.5" HDD/SSD)			Default with 64GB M.2 (Option for SATA interface 2.5" HDD/SSD)	
External I/O Connector	2 x Intel® I211AT 4 x USB 3.0 1 x HDMI 1 x RS-232 1 x DC Jack	2 x Intel® I211AT, 4 x USB 3.0, 1 x RS-232/422/485, 1 x DP++, 1 x DP, 1 x HDMI, 1 x Line-out, 1 x Mic-in, 1 x DC Jack, 1 x Phoenix Connector for DC in 1 x Phoenix Connector for Reset	2 x Intel® I211AT, 4 x USB 3.0, 1 x RS-232/422/485, 1 x DP++, 1 x DP, 1 x HDMI, 1 x Line-out, 1 x Mic-in, 1 x DC Jack, 1 x Phoenix Connector for DC in 1 x Phoenix Connector for Reset	3 x USB 3.1 Gen1, 1 x USB 3.1 Gen1 1 x RS-232 (default)/422/485 1 x Intel® I225IT 2.5 GbE 1 x Intel® I219LM GbE PHY 2 x DP++ 1 x Line-out, 1 x Mic-in 1 x Mini Din 4-pin DC Jack, 1 x Phoenix Connector for DC in 1 x Phoenix Connector for Reset	3 x USB 3.1 Gen1, 1 x USB 3.1 Gen1 1 x RS-232 (default)/422/485 1 x Intel® I225IT 2.5 GbE 1 x Intel® I219LM GbE PHY 2 x DP++ 1 x Line-out, 1 x Mic-in 1 x Mini Din 4-pin DC Jack, 1 x Phoenix Connector for DC in 1 x Phoenix Connector for Reset
Internal I/O Connector	1 x RS-232/422/485 2 x USB 2.0 1 GPIO 1 x Full Size Mini-PCIe support mSATA 1 x Half Size Mini-PCIe for option WIFI/BT	4 x RS-232 (optional) 4 x USB 2.0 (optional) 1 x GPIO 1 x full size Mini PCI-e support mSATA 1 x SIM card slot 1 x M.2 (2230) A-Key, support WiFi module	4 x RS-232 (optional) 4 x USB 2.0 (optional) 1 x GPIO 1 x full size Mini PCI-e support mSATA 1 x SIM card slot 1 x M.2 (2230) A-Key, support WiFi module	1 x RS232/422/485 (optional) 3 x RS232 (optional) 4 x USB 2.0 (optional) 1 x GPIO 1 x SIM card slot 1 x M.2 (2230) E-Key, support WiFi module/BT 1 x M.2 (2242) B-Key, support storage/5G module	1 x RS232/422/485 (optional) 3 x RS232 (optional) 4 x USB 2.0 (optional) 1 x GPIO 1 x SIM card slot 1 x M.2 (2230) E-Key, support WiFi module/BT 1 x M.2 (2242) B-Key, support storage/5G module
Power Requirement	+12V-26V DC in	+12V-24V DC in	+12V-24V DC in	DC in +12-24V	DC in +12-24V
Power Type	AT/ ATX (Default is AT Mode)	AT/ ATX (Default is AT Mode)	AT/ ATX (Default is AT Mode)	AT/ ATX (Default is AT Mode)	AT/ ATX (Default is AT Mode)
Operating Temperature	0°C ~ 45°C (32°F ~ 113°F)	0°C ~ 45°C (32°F ~ 113°F)	0°C ~ 45°C (32°F ~ 113°F)	0°C ~ 45°C (32°F ~ 113°F)	0°C ~ 45°C (32°F ~ 113°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)	-20°C ~ 60°C (-4°F ~ 140°F)	-20°C ~ 60°C (-4°F ~ 140°F)
Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing	0% ~ 90% Relative Humidity, Non-condensing	0% ~ 90% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing
Software Support	Windows 10 IoT, Linux, x86 Android 8.1	Windows 10 IoT, Linux, x86 Android 8.1	Windows 10 IoT, Linux, x86 Android 8.1	Windows 10 IoT, Linux	Windows 10 IoT, Linux
Dimension	183.1 x 115.8 x 51.6 mm	387 x 235 x 46 mm	501.9 x 296.2 x 52.4 mm	387 x 235 x 48 mm	501.9 x 296.2 x 55 mm
Weight	1.1 kg	2.5 Kg	4.1 Kg	2.9 kg	5.2 kg
Certification	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A

Open Frame Validate Accessories

Accessories	Part Number	Description
WIFI/ BT	ACC-OFT-WIFI-01R	M.2 WIFI-Kit for OFP Series (2230, key AE) / Antenna/Cable/BT 4.2/802.11 ac/a/b/g/n
Camera	ACC-OFT-NBCAM-01R	2.0M CMOS, USB2.0/1600x1200
	ACC-OFT-NBCAM-02R	5.0M Auto Focus CMOS, USB2.0, without mic
	ACC-OFT-NBCAM-03R	5.0M Auto Focus CMOS, USB2.0, with mic
Barcode Scanner	ACC-OFT-BCS-02R	2D barcode scanner with cable Slim Type/ CPU/640*480 /All-in-One Board/USB + TTL232 IO/Buzzer+Trigger/CBL-115U
	ACC-OFT-BCS-03R	2D barcode scanner Scan Engine (N4680) + (CB-2D002) + FFC + USB cable
Smart Card Reader	ACC-OFT-SCR-01R	Smart Card Reader (USB), Comply with: ISO7816-1,2,3,4 T=0,T=1 protocol (Option: NFC ISO 14443 A,B,C type, ISO 15693, ISO 18092)
	ACC-OFT-SCR-02R	Smart Card Reader (USB) with Cable, Comply with: EN/IEC 60950, ISO7816, EMV Level 1, PC/SC, CCID, FIPS201/TAA(USA), J-LIS/VCCI (Japan), PBOC (China), Microsoft WHQL Size:(LWH) 72.2x69x14 (mm)
	ACC-OFT-SCR-03R	Smart Card Reader (USB) with Cable, Comply with: EN/IEC 60950, ISO7816, EMV Level 1, PC/SC, CCID, FIPS201/TAA(USA), J-LIS/VCCI (Japan), PBOC (China), Microsoft WHQL Size:(LWH) 80x45x7.4 (mm)
NFC	ACC-OFT-NFC-01R	NFC Module 100mm antenna+ 500mm USB cable, 13.56MHz, ISO 1443 A/B, MIFARE, Felica
RFID	ACC-OFT-RFID-01R	RFID (USB with antenna) Mifare class with MAD1/MAD2/MAD3 T=CL ISO7816 interface supported ISO 14443 A Mifare Class USB interface, 19200, N, 8, 1 RF data rate: 106k, 212k, 424k, 848k bps Frequency: 13.56MHz
	ACC-OFT-RFID-02R	RFID 13.56MHz USB Module Full 3DES/AES crypto methods for Desfire EV1 USB, RS232(19200, N, 8, 1) T=CL ISO7816 interface Card Compatibilities NFC 1-4 TAGS ISO14443A/ ISO14443B/ ISO15693
	ACC-OFT-RFID-03R	RFID (w/o LED, buzzer)(W/ antenna) Mifare class with MAD1/MAD2/MAD3 T=CL ISO7816 interface supported ISO 14443 A Mifare Class USB interface, 19200, N, 8, 1 RF data rate: 106k, 212k, 424k, 848k bps Frequency: 13.56MHz

Desktop POS



Renity POS Solutions

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

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



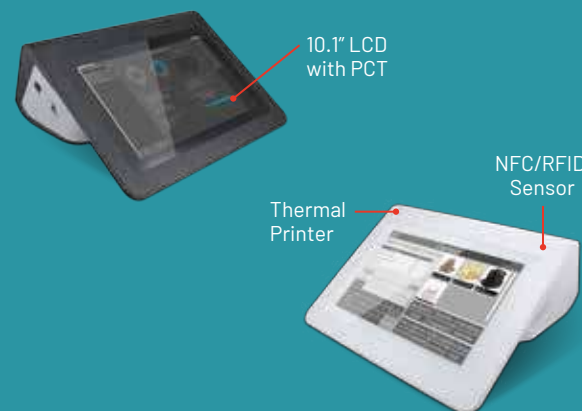
Model Number	RiVar-1502
LCD Size, Display Type	15.6", FHD
Resolution	1920 x 1080
Pixel Pitch	0.179 x 0.179
Luminance	300cd/m2
Contrast Ratio	700
Viewing Angle	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	14ms
Backlight	LED
Touch Type	Projective Capacitive
Touch Light Transmission	85%
Processor	Intel® Celeron® Processor J3455
I/O Chipset	EC ITE 8987E
System Memory	Default Onboard 4GB DDR4 SDRAM (Option Up to 8GB)
Expansion	1 x M.2 E Key slot for .2/4/5G WiFi module
Storage	Default 64GB eMMC (Option Up to 128GB)
USB	4 x USB3.0
COM Port	2 x COM supported 5V/12V output
Other	RJ-11 for Cash Drawer 12/24V, 1 x HDMI Optional for Camera/ NFC/ MSR
Thermal Printer	N/A
2nd LCD Panel	N/A
Display Chipset	Intel® HD Graphics 500
Audio	ES8316C
Audio Interface	2 x 2W
Ethernet	2 x RJ45 with Realtek 8111H
Adapter	24V DC in 60W
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 8.1
Dimension	391 x 251 x 44.5 mm
Weight	2.7 Kg



Model Number	Rity103	Rity153
LCD Size	10.1", 16:9	15", 4:3
Display Type	WSVGA	XGA
Resolution	1024 x 600	1024 x 768
Pixel Pitch	0.2175 x 0.2088 mm	0.297 x 0.297 mm
Luminance	350 cd/m ²	500 cd/m ²
Contrast Ratio	500	2500
Viewing Angle	70 (U), 70 (D), 70 (L), 70 (R)	88 (U), 88 (D), 88 (L), 88 (R)
Response Time	25 ms	16 ms
Backlight	LED	LED
Touch Type	5-Wire Resistive/ Projective Capacitive Touch	5-Wire Resistive/ Projective Capacitive Touch
Touch Light Transmission	RES 75 % / PCT 90%	RES 75 % / PCT 90%
Touch Controller	Onboard USB touch (PenMount) / USB touch (EETI)	Onboard USB touch (PenMount) / USB touch (EETI)
Processor	Intel® Celeron® Processor N3350 1.1GHz	Intel® Celeron® Processor N3350 1.1GHz
System Chipset	Intel® Apollo Lake SoC	Intel® Apollo Lake SoC
System Memory	1 x 204-Pin DDR3L 1066MHz SO-DIMMup to 8 GB	1 x 204-Pin DDR3L 1066MHz SO-DIMMup to 8 GB
Expansion	1 x M.2 B key slot support	1 x M.2 B key slot support
Storage	1 x M.2 B key slot	1 x 2.5" Drive Bay 1 x M.2 B key slot
I/O	4 x USB 3.0 2 x RS-232/422/485 (BIOS) 1 x RS-232 1 x HDMI 1.4b 1 x RJ11 for cash drawer	2 x USB 2.0 4 x USB 3.0 2 x RS-232/422/485 (BIOS) 2 x RS-232 1 x HDMI 1.4b 1 x VGA 1 x RJ11 for cash drawer 1 x Battery in connector
Display Chipset	Intel® HD Graphics 500	Intel® HD Graphics 500
Audio	Realtek 888S	Realtek 888S
Audio Interface	2 x 2W speaker	2 x 2W speaker
Ethernet	2 x Realtek RTL8111E-VB-GR	2 x Realtek RTL8111E-VB-GR
Power Connector	Mini-din 4P for DC in w/ lock type, +19-24V DC in	Mini-din 4P for DC in w/ lock type, +19-24V DC in
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)	Black Coverlens, ABS Plastic	Black Coverlens, ABS Plastic
Operating Temperature	0°C ~ 40°C (32°F ~ 95°F)	0°C ~ 40°C (32°F ~ 95°F)
Storage Temperature	-10°C ~ 60°C (14°F ~ 140°F)	-10°C ~ 60°C (14°F ~ 140°F)
Dimension (L x W x H)	260 x 178 x 42 mm	362.1 x 290.08 x 51 mm
Weight	1.8 kg	4 kg
Certifications	CE, FCC Class B, VCCI	CE, FCC Class B, VCCI
OS Information	Win10 IoT, Linux	Win10 IoT, Linux



Mini POS Terminal



10.1" LCD with PCT

Thermal Printer

NFC/RFID Sensor

Customer Display

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



2nd 5" LCD

Integrated Printer

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



Paper Roll



Model Number	RiPac-10P3
Processor	Intel® Celeron® N3350 1.1GHz Processor
System Memory	4GB LPDDR4 Onboard
Storage	64G eMMC/ Option for 128GB
Operating System	Windows 10, Android 8.1
LCD Panel	10.1" LCD, 5" LCD (customer facing)
Resolution	1280 x 800 (10.1"), 1280 x 720 (5")
Touch Screen	Projected Capacitive Touch
Wireless LAN	Built-in IEEE 8.0211 a/b/g/n/ac
Bluetooth	Bluetooth 4.2
Serial Port	2 x RS-232 in DB9, Powered with 5/12V
USB Port	4 x USB 3.0
SD card	1 x SD card slot support up to 128GB
LAN Port	2 x RJ45 (Realtek 8111H)
Cash Drawer	1 x RJ11 (12V/24V)
NFC	ISO/IEC 14443 A/B, 15693, 18092 (Optional)
Thermal Printer	Printing Method: Thermal Dot Line Printing Resolution: (W) 8 Dots/mm, (H) 8 Dots/mm Maximum Print Speed: 200mm/s Maximum Print Width: 72mm Maximum Paper Width: 80mm Type of Paper Cutting: Full Cut & Partial Cut
Power Type	+24V/6A 120W
Dimensions	299 (L) x 316.2 (W) x 148.9 (H) mm
Weight	3 kg±10%
Operating Temperature	5°C ~ 40°C (41°F ~ 104°F)
Storage Temperature	-10°C ~ 60°C (14°F ~ 140°F)
Operating Humidity	0 ~ 95% non-condensing
Certifications	CE, FCC, VCCI, CCC



Ruggedize

IP-65 dust and waterproof protection
MIL-STD-810G 4-foot drop resistance
Superior Gorilla glass cover lens



Longevity

5 Years long-term supply
Various Accessories support
Multiple OS support



Certification

EN 60601-1-2 4th edition
CE/ FCC/ VCCI/ CCC/ BSMI
More in progress
(Australia, Brazil ...etc)



Semi Rugged Tablet



Model Number	CAXA0
Processor	Intel® Celeron® N3350 1.1GHz Processor
System Memory	Onboard 4GB LPDDR4
Storage	64GB M.2 Solid State Drive (Option up to 128GB)
Operating System	Windows 10/ Android 8.1
LCD Size	10.1", WXGA
Resolution	1280 x 800
Luminance	300 cd/m ²
Touch Screen	10 Points Projective Capacitive
Wireless LAN	802.11 a/b/g/n/ac
Bluetooth	Bluetooth 5.0
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)
Downside I/O Connectors	1 x Audio Jack, 2 x USB 2.0 Type A, 1 x Micro SD, 1 x DC Jack, 1 x HDMI Output
Control Button	1 x Power Button, 1 x Barcode Scanner Trigger
LED Indicator	1 x Power
Power Requirement	DC Jack +19V
Battery	28.44W Li-Polymer Battery
Battery Operating Time	6 hours
Construction	Rubber + Plastic
Dimensions	281 x 193.3 x 19.95 mm
Weight	1 kg
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)
IP Rating	IP65
Certifications	CE, FCC, VCCI, CCC, BSMI, EN60601-1, EN60601-1-2



CAXA0-DC CAXA0 Desktop Cradle

- Desktop Cradle for CAXA0
- +19V DC input
- Support 3 x USB2.0/ 1 x 10/100 LAN
- 180 x 198.2 x 129.2 mm
- 1.05 Kg



CAXA0-WM CAXA0 Wall Mount kit

- Wall Mount kit for CAXA0
- +19V DC input
- Support 3 x USB2.0/ 1 x 10/100 LAN
- VESA mount compliant (75 x 75 mm)
- 143.6 x 218.8 x 48.6 mm
- 0.58 kg



CAXA0-CS CAXA0 Battery Charging Station

- Battery Charging Station for CAXA0
- +19V DC input
- Support 3 Batteries charging
- 159 x 105 x 57.9 mm
- 0.62 Kg



CAXA0-SS CAXA0 Shoulder Strap

- Shoulder Strap for CAXA0
- Adjustable shoulder strap with 130cm drop



CAXA0-HS CAXA0 Hand Strap

- Hand Strap for CAXA0

Tailored to Your Needs



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