

Empowering a

SMART FUTURE

Avalue IoT Ready



- Healthcare
- Manufacturing
- Transportation
- Retail
- Energy

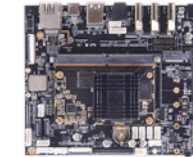


Industrial & Embedded
Motherboard

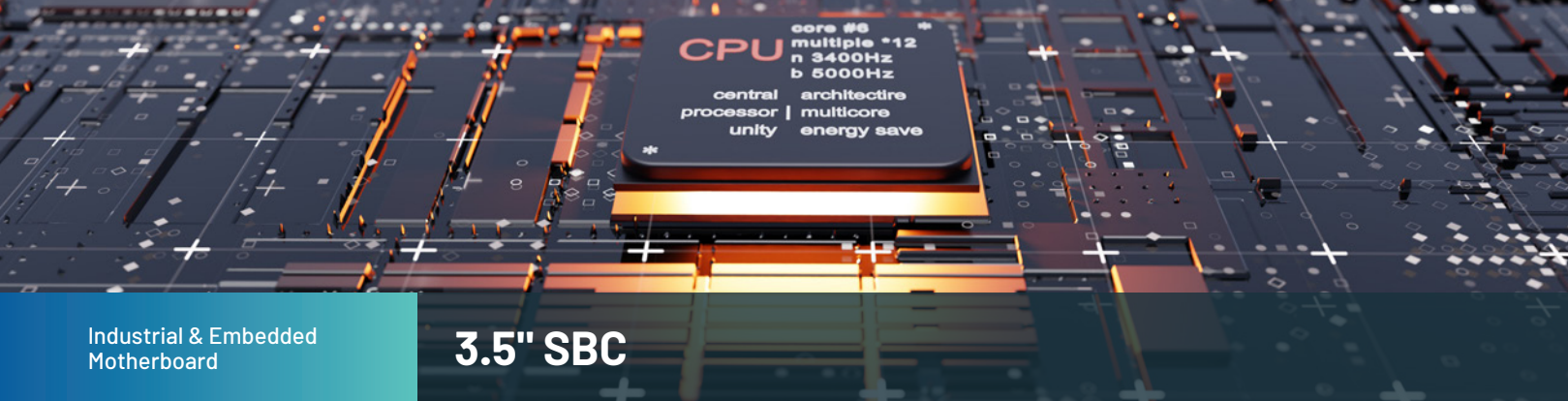
ARM-based SBC



Model Number	RSC-IMX8M	RSC-IMX61	RSC-3568J	ACP-IMX6POS
Processor	NXP i.MX8M Cortex-A53 Quad Core 1.3GHz; Cortex-M4 Core Processor	NXP i.MX 6 Dual Lite NXP i.MX 6 Quad Core	Rockchip RK3568J Quad-core Cortex-A55 1.8GHz	NXP i.MX 6 Dual Lite NXP i.MX 6 Quad Core
System Memory	2GB DDR4 (Default), Expandable to 4GB	1GB/ 2GB DDR3	2GB/ 4GB LPDDR4	1GB/ 2GB DDR3
Storage	16GB eMMC	4GB eMMC	32GB/ 64GB eMMC	4GB eMMC
External I/O Connector	1 x 10/100/1000 RJ45 1 x DC Jack 1 x Headphone Jack 1 x HDMI 2.0 In 1 x Micro SD Slot 1 x Power LED 1 x Power LED 1 x Reset 1 x USB 3.0 Type A 1 x USB 3.0 Type C 1 x USB 3.0 Type C OTG	1 x DC Jack 1 x HDMI 2.0 In 1 x Line-out 1 x Micro SD Slot 1 x Power LED 1 x Reset 2 x USB 2.0 Type A 1 x Jack for I/R Extender Cable, Co-design (Optional)	1 x DC Jack 1 x HDMI 2.0 In 1 x Reset 1 x RS232/422/485 DB9 1 x USB 3.0 Type A 1 x USB 3.0 Type A OTG 2 x 10/100/1000 RJ45 LAN	2 x 10/100/1000 RJ45 Powered LAN 1 x DC Jack 1 x HDMI 2.0 In 1 x Micro SD Slot 1 x Mini USB 1 x RJ11 2 x RS232/422/485 DB9 2 x USB 2.0 Type A
Internal I/O Connector	1 x Backlight 1 x Extend Connector 1 x I²C 1 x LVDS 2 x M.2 2230 E-Key 1 x Mini PCIe 1 x MIPI CSI 1 x Power LED 1 x RTC Battery 1 x SIM Card Slot 1 x USB 2.0	1 x Backlight 1 x CAN 1 x I²C 1 x Line-out 1 x LVDS 1 x Micro USB 1 x RS232 1 x RS232/422/485 Debug 1 x RTC Battery 1 x SATA 1 x USB 2.0 1 x USB 2.0 Type B OTG 1 x USB Touch Interface	1 x Backlight 2 x CAN 1 x Debug 1 x eDP 5 x GPIO 1 x I²C 1 x LVDS 1 x M.2 2230 E-Key 1 x M.2 3042 B-Key 1 x Micro SD Slot 1 x MIPI DSI 3 x RS232 1 x RS232/422/485 1 x RTC Battery 1 x SD Card Slot 1 x SIM Card Slot 1 x Speaker 1 x Touch Button 2 x USB 2.0 1 x 4Pin DC PHD 2.0	N/A
Power Requirement	DC 12V ~ 24V Terminal Block (Panel Only Supports 12V)	DC 12V ~ 26V 2.5mm DC Jack, Typical 19V Input with Brownout Detection or Powered LAN	DC 12V ~ 24V	DC 12V ~ 24V
Operating Temperature	-40 ~ 85°C (-40 ~ 185°F)	-20 ~ 85°C (-4 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-20 ~ 85°C (-4 ~ 185°F)
Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)
Dimension (L x W)	146 x 102 mm	146 x 102 mm	146 x 101 mm	175 x 110 mm
Weight	0.15 kg	0.15 kg	0.16 kg	0.16 kg
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B
Software Support	Android 9.0, Android 10 Yocto 2.5	Android 4.4, Android 6.0 Yocto 2.1	Android 13 Debian 11	Android 4.4 Yocto 1.7

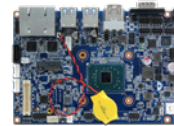
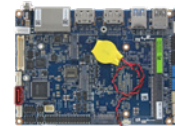
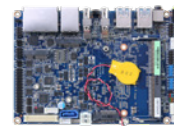
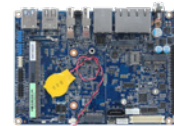
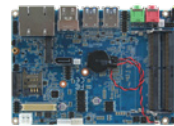
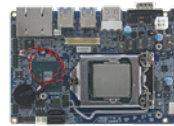


Model Number	ACP-3588	ACP-3566-PI	ACP-IMX8MM-PI
Processor	RockChip RK3588 Quad-core Cortex-A76 and Quad-core Cortex-A5	RockChip RK3566 Quad-core Cortex-A55	NXP i.MX8Mmini Quad Core Cortex-A53
System Memory	4GB/ 8GB/ 16GB/ 32GB LPDDR4	2 GB	2 GB
Storage	32 GB eMMC	16 GB eMMC	8 GB eMMC
External I/O Connector	1 x 10/100/1000 RJ45 Powered LAN 1 x HDMI 2.0 In 2 x HDMI 2.0 Out 4 x RS-232/422/485 Debug 3 x USB 2.0 Type A 1 x USB 2.0 Type C OTG 1 x USB 3.0 Type A	1 x 10/100/1000 RJ45 Powered LAN 1 x HDMI 2.0 Out 2 x USB 2.0 Type B 1 x USB 2.0 Type B OTG 1 x USB 3.0 Type A 1 x PWR IN	1 x 10/100/1000 RJ45 Powered LAN 1 x Audio Jack TRS 1 x HDMI 2.0 Out 4 x USB 2.0 Type B 1 x USB 3.0 Type C 1 x DC in
Internal I/O Connector	1 x EDP 2 x 20P GPIO (GPIO/ UART/ SPI/ I²C) 1 x LVDS 1 x M.2 Key M 1 x MIPI CSI 1 x MIPI DSI 2 x SATA 1 x SPDIF 1 x 30 pin Audio Interface 1 x Speaker Header 2 x WiFi/ BT Antenna 2 x I²C	1 x BT4.0 28 x GPIO 1 x TF Card 1 x WiFi 802.11 a/b/g/n/ac 1 x MIPI CSI 1 x MIPI DSI	1 x BT4.0 40 x GPIO 1 x MIPI CSI 1 x MIPI DSI 1 x USB Wifi/ BT Port
Power Requirement	DC 12V	DC 5V	DC 5V
Operating Temperature	Commercial: 0 ~ 80°C (32 ~ 176°F)	Commercial: 0 ~ 80°C (32 ~ 176°F)	-20°C ~ 85°C (-4°F ~ 185°F)
Storage Temperature	-20°C ~ 85°C (-4°F ~ 185°F)	0°C ~ 60°C (32°F ~ 140°F)	-20°C ~ 85°C (-4°F ~ 185°F)
Dimension (L x W)	150 x 125 mm	85 x 55 mm	85 x 55 mm
Weight	0.16 kg	0.16 kg	0.16 kg
Certification	CE, FCC, Class B	CE, FCC, Class B	CE, FCC, Class B
Software Support	Andriod 11	Linux Debian 11	Linux (Yocto)

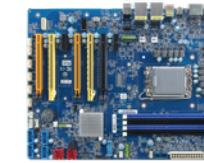
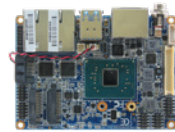
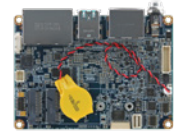


Industrial & Embedded
Motherboard

3.5" SBC



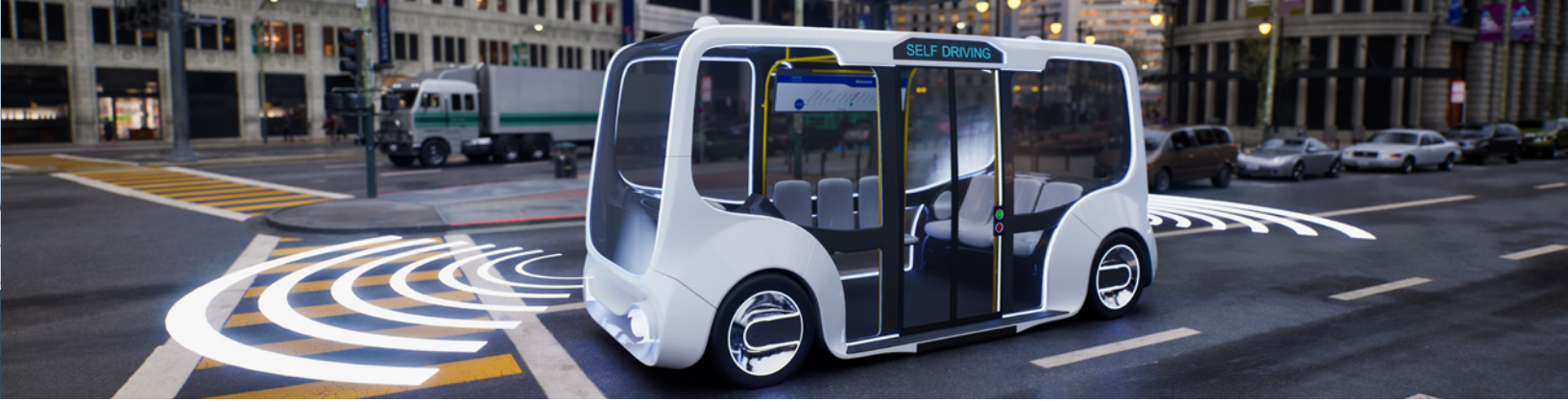
Model Number	ECM-RPL	ECM-ADLS	ECM-CFS	ECM-KBLH	ECM-WHL	ECM-EHL	ECM-EHL3	ECM-TGU	ECM-TGUC	ECM-ASL	ECM-APL
Processor	Onboard 13th Intel® Gen Core™ i7/i5/i3/ Pentium®/ Celeron® BGA Processor, Supports TDP 15/ 28W	Intel® LGA1700 Socket Supports 12th Gen Intel® Core™ i9/i7/i5/i3/ Pentium®/ Celeron® Processors, 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)	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 BGA 11th Gen Intel® Core™ Processors U-series & Celeron®	Onboard BGA 11th Gen. Intel® Core™ Processors U-series i5/i3	Intel® Processor N97 BGA Processor	Intel® Pentium®/ Celeron®/ Atom™ SoC Processor
System Chipset	N/A	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	N/A
System Memory	1 x 262-pin DDR5 4800MHz SO-DIMM Supports up to 32GB	1 x 262-pin DDR5 4800MHz SO-DIMM Supports up to 32GB	1 x 260-Pin DDR4 2400MHz SO-DIMM up to 32GB	1 x 260-Pin DDR4 2400MHz SO-DIMM up to 16GB	2 x 260-pin DDR4 2400MHz SO-DIMM up to 64GB	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)	1 x 262-pin DDR5 4800MHz SO-DIMM Supports up to 16GB	1 x 204-pin DDR3L 1600 & 1333MHz SO-DIMM Supports up to 8 GB SDRAM (Non-ECC)
Watchdog Timer	H/W Reset, 1 sec. ~ 65535 sec.	H/W Reset, 1 sec. ~ 65535 sec.	H/W Reset, 1 sec. ~ 65535 sec.	H/W Reset, 1 sec. ~ 65535 sec.	H/W Reset, 1 sec. ~ 65535 sec.	H/W Reset, 1 sec. ~ 65535 sec. and 1 sec./step	H/W Reset, 1 sec. ~ 65535 sec. and 1 sec./step	H/W Reset, 1 sec. ~ 65535 sec. and 1 sec./step	H/W Reset, 1 sec. ~ 65535 sec. and 1 sec./step	H/W Reset, 1 sec. ~ 65535 sec. and 1 sec./step	H/W Reset, 1 sec. ~ 65535 sec. and 1 sec./step
Expansion	1 x M.2 (2242) B-Key 1 x M.2 (2230) E-Key 1 x M.2 (2280) M-Key	1 x M.2 (2230) E-Key	1 x Mini PCIe Supports mSATA (Q370 Support mPCIe/ mSATA/ USB2.0 Device, H310 Support mSATA/ USB 2.0 Device)	1 x Mini PCIe Supports mSATA 1 x M.2 (2242) B-Key	1 x M.2 (2242/3042) B Key, (SATA, USB 3.0/ 2.0, SIM Slot) 1 x M.2 E Key 2230, (PCIe, USB2.0, CNVi)	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 (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 (2280) E-Key 1 x M.2 (2280) M-Key	1 x M.2 (2242) B-Key 1 x M.2 (2230) E-Key	1 x Mini PCIe (for PCIe & USB2.0) 1 x M.2 (2242) B-Key
Storage	1 x M.2 B Key (2242) 1 x M.2 (2280) M-Key 1 x SATA III	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 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	1 x M.2 (2242) B-Key 1 x SATA III	1 x M.2 (M.2 support SATA or PCIe x1/ USB)
I/O	4 x USB 2.0, 3 x USB 3.2 2 x RS-232/422/485 1 x 8bit GPIO, 1 x SPI, 1 x e-SPI	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	4 x USB 2.0, 2 x USB 3.1 Gen2 1 x SATA III, 3 x 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, 4 x 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, 4 x 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, 5 x RS-232 1 x RS-232/422/485 1 x 8bit GPIO, 1 x SPI, 1 x e-SPI	4 x USB 2.0, 3 x USB 3.2 1 x SATA III, 3x RS-232 1 x RS-232/422/485 1 x 8bit GPIO, 1 x e-SPI	1 x USB 2.0, 4 x USB 3.0 1 x SATA III, 5 x RS-232 1 x RS-232/422/485 1 x Micro SIM Card Slot 1 x 8bit GPIO, 1 x LPC, 1 x SPI
Display Chipset	Intel® Iris® Xe/ UHD Graphics (Dependent on CPU) 1 x HDMI, 1 x DP++, 1 x 2CH LVDS/ eDP, 1 x USB Type C Support DP Supports 4 Display	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 + HDMI 1 (Default LVDS Enable) or HDMI 1 + HDMI 2 (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® 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 2 x 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	Integrated Intel® UHD Graphics 1x HDMI, 1x DP, 1x 2CH LVDS/ eDP Supports Triple Display	Intel® HD Graphics 500 Supports Triple Display
Resolution	HDMI: 4096 x 2160 @ 60Hz DP++: 4096 x 2304 @ 60Hz LVDS: 1920 x 1080 @ 60Hz or eDP 1920 x 1080 @ 60Hz 2 Lanes USB Type C Support DP: 4096 x 2304 @ 60Hz	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: 4096 x 2304 @ 30Hz LVDS: 1920 x 1080 @ 60Hz	Dual HDMI: 4096 x 2160 @ 24Hz LVDS: 1920 x 1080 @ 60Hz	Dual HDMI: 4096 x 2160 @ 24/ 30Hz LVDS: 1920 x 1080 @ 60Hz	HDMI: 4096 x 2160 @ 24Hz DP: 4096 x 2160 @ 60Hz eDP: 4096 x 2160 @ 60Hz	2 x DP++: 4096 x 2304 @ 60Hz Dual Channel 18/ 24bits LVDS: 1920 x 1080 @ 60Hz eDP: 4096 x 2160 @ 60Hz	2 x DP++: 4096 x 2304 @ 60Hz Dual Channel 18/24bits LVDS Max. resolution 1920 x 1080 @ 60Hz eDP: 4096 x 2160 @ 60Hz	2 x DP++: 4096 x 2304 @ 60Hz Dual Channel 18/24bits LVDS: 1920 x 1080 @ 60Hz eDP: 4096 x 2160 @ 60Hz	HDMI: 4096 x 2160 @ 60Hz DP: 4096 x 2160 @ 60Hz LVDS: 1920 x 1080 @ 60Hz eDP: 4096 x 2160 @ 60Hz	Dual HDMI: 3840 x 2160 @ 30Hz LVDS: 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 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 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	Realtek Audio codec Mic-In, Line-In, Line-Out	Realtek Audio Codec Mic-in, Line-in, Line-out
Ethernet Chipset	2 x Intel® I226LM/ IIT	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	2 x Intel® I226LM/ IT	1 x Intel® I226LM 2 x Intel® I210AT	3 x Intel® I226LM/IIT	1 x Intel® I225V 1 x Intel® I219LM	2 x Intel® I226V/IIT	2 x Intel® I210AT
Power Requirement	+9V ~ 36V	+12V	+12V	+12V	+12V	+9V ~ +36V	+9V ~ +36V	+12V ~ +24V	+12V ~ +24V	+9V ~ +36V	+12V ~ +24V
Power Type	AT/ ATX	AT/ ATX	AT/ ATX	AT/ ATX	AT/ ATX	AT/ ATX	AT/ ATX	AT/ ATX	AT/ ATX	AT/ ATX	AT/ ATX
Operating Temp.	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)	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°C ~ 60°C (-4°F ~ 140°F) for Wide Temperature CPU SKU	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) -40°C ~ 85°C (-40°F ~ 185°F) (Optional for Wide Temperature)
Dimension (L x W)	5.7" x 4" (146 x 101 mm)	5.7" x 4" (146 x 101 mm)	5.7" x 4" (146 x 101 mm)	5.7" x 4" (146 x 101 mm)	5.7" x 4" (146 x 101 mm)	5.7" x 4" (146 x 101 mm)	5.7" x 4" (146 x 101 mm)	5.7" x 4" (146 x 101 mm)	5.7" x 4" (146 x 101 mm)	5.7" x 4" (146 x 101 mm)	5.7" x 4" (146 x 101 mm)



Model Number	EPX-EHLP	EPX-APLP
Processor	Intel® Celeron®/ Atom™ SoC Processor	Intel® Celeron®/ Atom™ SoC Processor
System Chipset	N/A	N/A
System Memory	1 x 260-pin DDR4 2666MHz SO-DIMM Supports up to 32GB	1 x 204-pin DDR3L 1600 & 1333MHz SO-DIMM Supports up to 8GB
Expansion	1 x M.2 Key-B 1 x M.2 Key-E	1 x M.2 Key-B 1 x M.2 Key-E 1 x Micro SIM to SIM Adapter by Option
Display	Intel® UHD Graphics for 10th Gen Intel® Processors 2 x DP++/ LVDS	Intel® HD Graphics 500 HDMI + LVDS + DP++
Resolution	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
Audio	N/A	Realtek Audio Codec 2 x 2W Audio Amplifier
Ethernet	2 x Intel® I226LM/ IT	2 x Intel® I226LM
USB/SATA/COM/LAN	6/1/2/2	6/1/6/2
Power Requirement	+12V	+12V
Power Type	AT/ ATX	ATX
Operating Temp.	0°C ~ 60°C (32°F ~ 140°F) -20°C ~ 60°C (-8°F ~ 140°F) for Wide Temperature CPU SKU	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	3.93" x 2.83" (100 x 72 mm)	3.93" x 2.83" (100 x 72 mm)
Weight	0.88 lbs (0.4 kg)	0.88 lbs (0.4 kg)

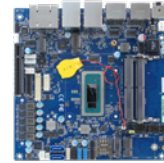
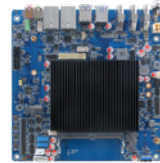
Model Number	EZX-EHLP
Processor	Intel® Pentium®/ Celeron®/ Atom™ Processor
System Chipset	N/A
System Memory	Single Channel LPDDR4 4/ 8GB Memory Down
Expansion	1 x M.2 Key-B, 1 x Micro SIM to SIM Adapter by Option Onboard eMMC
Display	Intel® UHD Graphics for 10th Gen Intel® Processors Mini DP/ eDP
Resolution	Mini DP++ : 4096 x 2160 @ 60Hz eDP: 4096 x 2160 @ 60Hz LVDS: 1920 x 1080
Audio	N/A
Ethernet	1 x Intel® I210AT/ IT
USB/SATA/COM/LAN	6/0/1/1
Power Requirement	+12V
Power Type	AT/ ATX
Operating Temp.	0°C ~ 60°C (32°F ~ 140°F) -20°C ~ 60°C (-8°F ~ 140°F) for Wide Temperature CPU SKU
Dimension (L x W)	3.3" x 2.5" (85 x 65 mm)
Weight	0.66 lbs (0.3 kg)

Model Number	RX680R	ERX-W480P	BC680R	EAX-W480P	EAX-C246P
Processor	Intel® 12/ 13th Gen Core™ i9/i7/ i5/i3 Processor, Supports LGA 1700 CPU up to 65W Max	Intel® LGA1200 Socket Supports 10th Gen. Intel® Xeon® (Workstation)/ Core™, Pentium®/ Celeron® Processors (Max. TDP at 95W)	Intel® 12/13th Gen Core™ i9/i7/ i5/i3 Processor, Supports LGA 1700 CPU up to 65W Max	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
System Chipset	Intel® R680E Chipsets	Intel® W480E Chipset	Intel® R680E Chipsets	Intel® W480E Chipset	Intel® C246 Chipset
System Memory	4 x DIMM up to 128GB Max Dual Channel DDR5 4400 MHz with ECC Support (ECC Memory Supported by CPU)	4 x 288-pin DDR4 2400 ~ 2933MHz DIMM Supports up to 128GB (ECC Memory Supported by CPU)	4 x DIMM up to 128GB Max Dual Channel DDR5 4400MHz with ECC Support (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)
Expansion	1 x Gen 5 PCIe x16 2 x Gen 4 PCIe x4 1 x Gen 3 PCIe x4 Open Ended	2 x PCI-e x16 (1 x PCI-e x16 or 2 x PCI-e x8), 2 x PCI-e x4	1 x Gen 5 PCIe x16 2 x Gen 4 PCIe x4 1 x Gen 3 PCIe x4 1 x Gen 3 PCIe x1 2 x Gen 3 PCIe x1 Open Ended	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
Display	Intel® 12/13th Gen. CPU Integrated DP++/ LVDS/ Optional eDP Four Independent Displays	Intel® 10th Gen. CPU Integrated VGA / HDMI /DP++ / LVDS Triple Display	Intel® 12/13th Gen. CPU Integrated DP++ / HDMI	Intel® 10th Gen. CPU Integrated DVI-D + DP++ + DP++	Intel® 8/ 9th Gen. CPU Integrated VGA + HDMI + DP
Resolution	DP: 7680 x 4320 @ 60Hz (2 x DP++: 1920 x 1080 @ 60Hz) Dual Channel 18/24bits LVDS 1920 x 1080Hz Option eDP 4096 x 2304 @ 60Hz	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: 7680 x 4320 @ 60Hz (2 x DP++: 1920 x 1080 @ 60Hz) HDMI 2.0b: 4096 x 2304 @ 60Hz	DVI-D: 2048 x 1536 @ 60Hz DP++: 3840 x 2160 @ 60Hz	VGA: 2048 x 1536 @ 60Hz HDMI: 3840 x 2160 @ 30Hz, 2560 x 1600 @ 30Hz DP: 4096 x 2304 @ 60Hz
Audio	Realtek Audio Code Mic-in, Line-out 3W Amplifier	Realtek Audio Code Line-in, Mic-in, Line-out 6W Amplifier	Realtek Audio Code Mic-in, Line-out 3W Amplifier	N/A	Realtek Audio Code Mic-in, Line-in, Line-out 1 x 6W Audio Amplifier
Ethernet	2 x Intel® i225-LM	1 x Intel® I219LM 1 x Intel® I210AT 2 x Intel® I225LM 1 x Intel® X550-AT2 (BOM Option)	2 x Intel® i225-LM	1 x Intel® I225V 1 x Intel® I219LM 1 x Intel® I210AT	1 x Intel® I219LM 1 x Intel® I210AT
USB/SATA/COM/LAN	17/4/6/2	14/4/6/4 or 6	17/4/6/2	12/4/10/3	14/6/10/2
Power Requirement	+12V/ +5V/ 5VSB/ +3.3V/ -12V	+12V/ +5V/ 5VSB/ +3.3V/ -12V	+12V/ +5V/ 5VSB/ +3.3V/ -12V	+12V/ +5V/ 5VSB/ +3.3V/ -12V	+12V/ +5V/ 5VSB/ +3.3V/ -12V
Power Type	AT/ ATX	AT/ ATX	AT/ ATX	AT/ ATX	AT/ ATX
Operating Temp.	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimension (L x W)	9.6" x 9.6" (243.84 x 243.84 mm)	9.6" x 9.6" (243.84 x 243.84 mm)	12" x 9.6" (304.8 x 243.84 mm)	12" x 9.6" (304.8 x 243.84 mm)	12" x 9.6" (304.8 x 243.84 mm)
Weight	1.45 lbs (0.66 kg)	1.35 lbs (0.6 kg)	1.85lbs (0.84 kg)	1.32 lbs (0.6 kg)	1.32 lbs (0.6 kg)

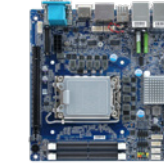


Industrial & Embedded
Motherboard

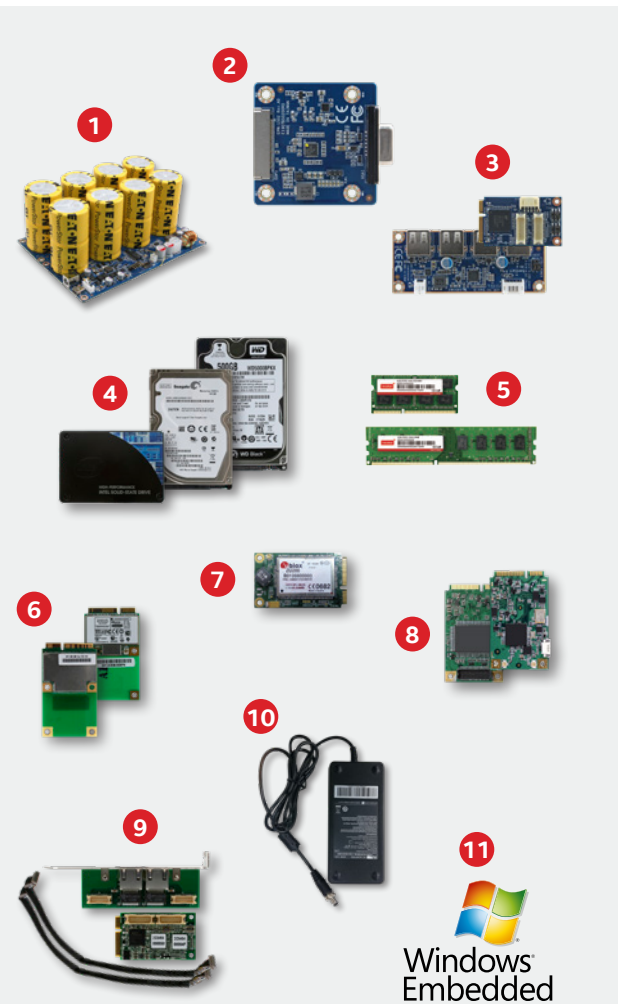
Mini-ITX



Model Number	EMX-ASLP	EMX-RPLP	EMX-TGLP	EMX-TGLC	EMX-SKLUP
Processor	Onboard BGA 12th Gen. Intel® Processor N97 Processor	Onboard BGA 13th Gen. Intel® Core™ Processors P-series	Onboard BGA 11th Gen. Intel® Core™ Processors U-series	Onboard BGA 11th Gen. Intel® Core™ Processors U-series & Celeron®	Onboard BGA 6th Gen. Intel® Core™ Processors
System Chipset	N/A	N/A	N/A	N/A	N/A
System Memory	1 x 262-pin DDR5 4800MHz SO-DIMM Supports up to 16GB	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	1 x M.2 B-Key 1 x M.2 E-Key 1 x M.2 M-Key	1 x M.2 B-Key 1 x M.2 E-Key	1 x M.2 B-Key 1 x M.2 E-Key	1 x PCI-e x4 1 x M.2 B-Key 1 x M.2 E-Key	1 x PCI-e x1 1 x M.2 B-Key 1 x M.2 A-Key 1 x SD Card Slot
Display	Intel® UHD Graphics Integrated 1 x HDMI, 1 x DP, 1 x DP++, eDP, LVDS Triple Display	Intel® Iris® Xe/ UHD Graphics (Dependent on CPU) 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	1 x HDMI 2.0b: 4096 x 2160 @ 60Hz 1 x DP: 4096 x 2160 @ 60Hz 1 x DP++: 1920 x 1080 @ 60Hz Dual Channel 18/24bits LVDS: 1920 x 1080Hz, Co-lay eDP 1920 x 1080 @ 60Hz	2 x DP++ (DP1+DP2): 1920 x 1080 @ 60Hz 2 x DP (DP3+DP4): 5120 x 3200 @ 60 Hz (2 x DP++, 2 x DP, eDP, LVDS) Dual Channel 18/24bits LVDS: 1920 x 1080Hz eDP: 3840 x 2169 @ 60Hz	2 x DP++: 4096 x 2304 @ 60Hz DP: 4096 x 2304 @ 60Hz (2 x DP++, 2 x DP, eDP, LVDS) Dual Channel 18/24bits LVDS: 1920 x 1080Hz eDP: 4096 x 2304 @ 60Hz	2 x DP++: 4096 x 2304 @ 60Hz (2 x DP++, eDP, LVDS) Dual Channel 18/24bits LVDS: 1920 x 1080Hz eDP: 4096 x 2304 @ 60Hz	HDMI 1.4b: 3840 x 2160 @ 30Hz 2560 x 1600 @ 30Hz 2 x DP 1.2a: 4096 x 2160 @ 60Hz (1 x HDMI/ DP, 1 x DP++), Dual Channel 18/24-bits LVDS, Co-lay eDP 1.3: 4096 x 2160 BOM Optional
Audio	Realtek Audio Codec Mic-in, Line-out 2 x 2W 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 Codec Mic-in, Line-out 2 x 6W Audio Amplifier	Realtek Audio Code Mic-in, Line-out 2 x 6W Audio Amplifier
Ethernet	1 x Intel® I226LM 1 x Intel® I226V	3 x Intel® I226LM/IT 1 x Intel® I219LM	1 x Intel® I226LM/IT 1 x Intel® I219LM 2 x Intel® I210AT	1 x Intel® I226LM 1 x Intel® I219LM	1 x Intel® I219LM 1 x Intel® I210AT
USB/SATA/COM/LAN	8/2/6/2	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	+12V ~ 24V
Power Type	AT/ ATX	AT/ ATX	AT/ ATX	AT/ ATX	AT/ ATX
Operating Temp.	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F) -20°C ~ 60°C (-4°F ~ 140°F) for Wide Temperature CPU SKU	0°C ~ 60°C (32°F ~ 140°F) -20°C ~ 60°C (-4°F ~ 140°F) for Wide Temperature CPU SKU	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 x 170 mm)	6.69" x 6.69" (170 x 170 mm)	6.69" x 6.69" (170 x 170 mm)	6.69" x 6.69" (170 x 170 mm)	6.69" x 6.69" (170 x 170 mm)
Weight	0.53 lbs. (0.24 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)



Model Number	EMX-EHLP	MX610HD	MX610H	EMX-C246P
Processor	Intel® Pentium®/ Celeron®/ Atom™ SoC Processor	LGA1700 Socket Supports 12/ 13th Gen. Intel® Core™ i9/ i7/ i5/ i3/ Pentium®/ Celeron® Processors	LGA1700 Socket Supports 12/ 13th Gen. Intel® Core™ i9/ i7/ i5/ i3/ Pentium®/ Celeron® Processors	LGA1151 Socket Supports 8/ 9th Gen. Intel® Core™ i7/ i5/ i3/ Pentium®/ Celeron® Processors
System Chipset	N/A	Intel® H610E Chipset	Intel® H610E Chipset	Intel® C246 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 262-pin DDR5 4800MHz SO-DIMM Supports up to 64GB	2 x 262-pin DDR5 4800MHz SO-DIMM Supports up to 64GB	2 x 260-pin DDR4 2400/2666MHz SO-DIMM Supports up to 64GB (ECC Memory Supported by CPU)
Expansion	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 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
Display	Intel® UHD Graphics for 10th Gen Intel® Processors Triple Display DP++, HDMI, LVDS (eDP by BOM Option)	Intel® Integrated UHD Graphic with Xe Architecture (CPU Dependent) HDMI + DP + LVDS	Intel® Integrated UHD Graphic with Xe Architecture (CPU Dependent) HDMI, DP++, LVDS	Intel® 8/ 9th Gen. CPU Integrated VGA + HDMI + LVDS VGA + HDMI + HDMI
Resolution	HDMI 2.0b: 4096 x 2160 @ 60Hz DP++: 4096 x 2160 @ 60Hz Dual Channel 18/24bits LVDS: 1920 x 1080 eDP: 4096 x 2160 @ 60Hz (BOM Optional)	HDMI: 3840 x 2160 @ 30Hz DP: 4096 x 2304 @ 60Hz Dual channel 18/24-bits LVDS: 1920 x 1080 @ 60Hz	HDMI: 3840 x 2160 @ 30Hz DP: 4096 x 2304 @ 60Hz Dual channel 18/24-bits LVDS: 1920 x 1080 @ 60 Hz	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
Audio	Realtek Audio Code Mic-in, Line-out 2 x 6W Audio Amplifier	Realtek Audio Code 3W Audio Amplifier	Realtek Audio Code 3W Audio Amplifier	Realtek Audio Code 6W Audio Amplifier
Ethernet	4 x Intel® i226LM/IT	1 x Intel® I219V 1 x Intel® I225LM	1 x Intel® I219LM 1 x Intel® I225V	1 x Intel® I219LM 3 x Intel® I210AT
USB/SATA/COM/LAN	8/2/6/4	8/2/3/2	10/3/4/2	13/4/6/4
Power Requirement	+12V ~ 24V	+12V ~ 24V	+12V/ +5V/ 5VSB/ +3.3V/ -12V	+12V/ +5V/ 5VSB/ +3.3V/ -12V
Power Type	AT/ ATX	AT/ ATX	AT/ ATX	AT/ ATX
Operating Temp.	0°C ~ 60°C (32°F ~ 140°F) -20°C ~ 60°C (-8°F ~ 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)
Dimension (L x W)	6.69" x 6.69" (170 x 170 mm)	6.69" x 6.69" (170 x 170 mm)	6.69" x 6.69" (170 x 170 mm)	6.69" x 6.69" (170 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)



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.

Embedded Peripheral		
No	Embedded Peripherals	Description
1	Power Board	EPM-1712 Vehicle 100Watt Smart DC/DC Converter
		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
		EPM-1608 M.2 2242/2260/2280 Dual 2.5 GbE LAN 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/ 200W/ 220W
11	Microsoft Windows Embedded OS	Avalue Provides Embedded Software to Customers Who Integrated Avalue's Hardware Products. Windows Embedded Standard 7/8 Window 10 IoT Enterprise Window 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 ~ 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 ~ 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 ~ 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 ~ 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 1.5/12/480Mbps), USB 1.1 Compatible



EPM-1605
USB to mPCIe Module with USIM

- Input Interface USB 2.0
- Output Interface USB 2.0
- Operation Temperature : 0 ~ 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 ~ 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-1712
Vehicle 100Watt Smart DC/DC Converter

- Wide Range DC Input: Typical 12/24Vdc (+9 ~ +36V)
- Intelligent System on/off Control Via Jumper Setting
- 6 Selectable Power on/off Timing Modes
- Load Down/ Over Voltage/ Short Circuit/ Over Current Protection
- Battery Voltage Monitor



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 ~ 60°C
- Wide DC Input: +12 ~ 24Vdc
- Over Temperature Protection



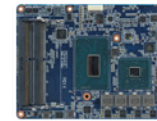
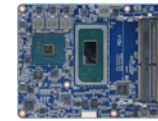
EPM-1721
Railway 60W Power Board

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



Computer-on-Module

COM Express Type 10 / COM Express Type 6

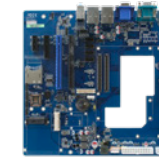


Model Number	ESM-RPL	ESM-RPLC	ESM-APLM	ESM-EHLC	ESM-APLC	ESM-BYT2	ESM-KBLU	ESM-TGH	ESM-CFH	ESM-SKLH
Processor	13th Gen Intel® Raptor Lake P-Series (28 W), U-Series (15 W), H-Series (45W) BGA Processor	13th Gen Intel® Raptor Lake P-Series (28 W), U-Series (15 W) BGA Processor	Intel® Celeron®/ Pentium®/ 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	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
System Memory	2 x 262-pin DDR5 4800MHz SO-DIMM Supports up to 64GB	1 x 262-pin DDR5 5200MHz SO-DIMM Supports up to 32GB	1 x 204-pin DDR3L 600/1333MHz SO-DIMM up to 8GB	2 x 260-pin DDR4 3200MHz SO-DIMM Supports up to 32GB (Only Atom® x6000 Series Processors Support IBCEC)	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	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 96GB	2 x 260-pin DDR4 SO-DIMM up to 32GB
Expansion	1 x PCIe Gen4 x8 (Selected SKU, H Series) 2 x PCIe Gen4 x4 7 x PCIe Gen3 x1	2 x PCIe Gen4 x4 7 x PCIe Gen3 x1	1 x PCIe x4	3 x PCIe x1	3 x PCIe x1	3 x PCIe x1	8 x PCIe x1	1 x PEG x16 (Gen4, 16.0 GT/s) Support dGFX and NVMe Storage 8 x PCIe x1 (Gen3, 8.0 GT/s)	1 x PCIe x16 Gen3 8 x PCIe x1	8 x PCIe x1
USB	8 x USB 2.0 4 x USB 3.2 Gen2 2x USB4 (Optional)	8 x USB 2.0 4 x USB 3.2 Gen2 2x USB4 (Optional)	6 x USB 2.0 2 x USB 3.0	8 x USB 2.0 4 x USB 3.2 Gen2 x1 (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	8 x USB 2.0 4 x USB 3.2 Gen2 x1 (10 Gbps)	8 x USB 2.0 4 x USB 3.1	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 III	2 x SATA III	2 x SATA II	3 x SATA III	4 x SATA III	4 x SATA III	4 x SATA III
COM Port	2 x UART	2 x UART	N/A	2 x UART	1 x UART	2 x UART	2 x UART	2 x UART	2 x UART	2 x UART
MIO	1 x SMBus 1 x LPC 1 x I²C 1 x SPI	1 x SMBus 1 x LPC 1 x I²C 1 x SPI	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	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
Display Chipset	Intel® Iris® Xe Graphics on i7/i5 Processors Intel® UHD Graphics on i3/ Celeron® Processors Intel® Gfx up to 96 EU	Intel® Iris® Xe Graphics on i7/i5 Processors Intel® UHD Graphics on i3/ Celeron® Processors Intel® Gfx up to 96 EU	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)	Intel® 11th H Series SoC Processor Integrated	Intel® 8/ 9th SoC Processor Integrated	Intel® 6th SoC Processor Integrated
Display	DDI, VGA, eDP/ LVDS	DDI, VGA, eDP/ LVDS	LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI	VGA LVDS, DDI	VGA, LVDS, DDI	VGA, LVDS, DDI
Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio
Ethernet	1 x Intel® I226LM/IT	1 x Intel® I226LM/IT	1 x Intel® I210AT	1 x Intel® I225LM/IT	1 x Intel® I210AT	1 x Intel® I210AT	1 x Intel® I219LM	1 x Intel® I225LM/IT	1 x Intel® I219LM	1 x Intel® I219LM
Power Requirement	+9V ~ +19V	+9V ~ +19V	+4.75V ~ +20V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V	+9V ~ +19V
Operating Temperature	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) -40°C ~ 85°C (-40 ~ 185°F) for Wide Temperature CPU SKU	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)	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)
Dimension (L x W)	3.74" x 4.92" (95 x 95 mm)	3.7" x 3.7" (95 x 95 mm)	3.31" x 2.17" (84 x 55mm)	3.7" x 3.7" (95 x 95 mm)	3.7" x 3.7" (95 x 95 mm)	3.7" x 3.7" (95 x 95 mm)	3.7" x 3.7" (95 x 95 mm)	5" x 3.7" (125 x 95 mm)	5" x 3.7" (125 x 95 mm)	5" x 3.7" (125 x 95 mm)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B

Qseven Module / Eval Carrier Board



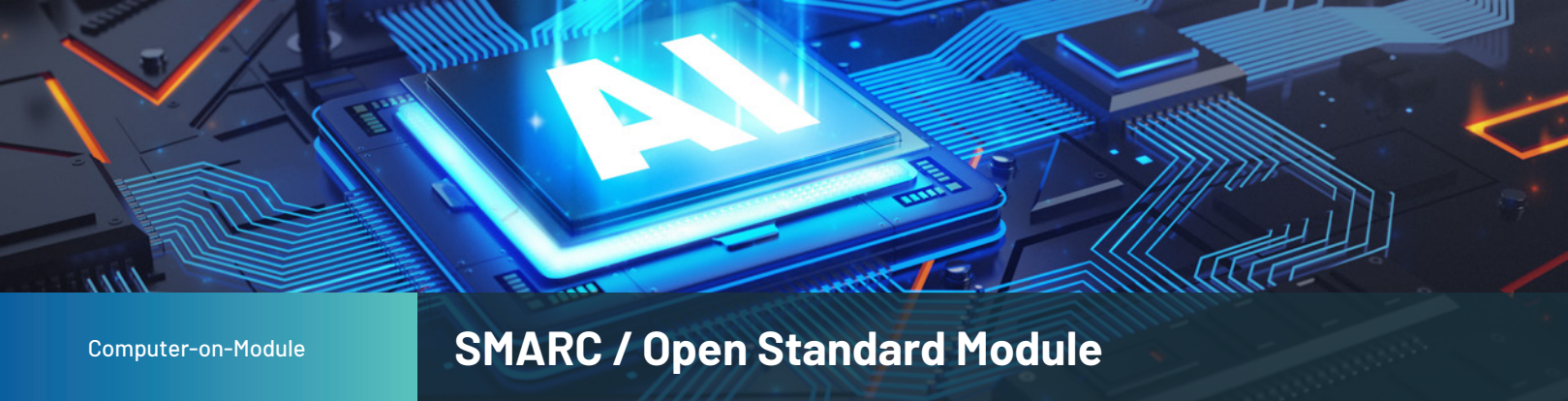
Model Number	EOM-EHL	EOM-APL	EOM-BYT
Processor	Intel® Celeron®/ Pentium®/ Atom™ SoC BGA Processor (Elkhart Lake Platform 6 ~ 12W)	Intel® Pentium®/ Celeron® Processor	Intel® Atom™/ Celeron® Processor
System Memory	Onboard Single Channel LPDDR4 3200MT/s 4GB Up to 8GB	Onboard DDR3L 1600 & 1333MHz 4GB Up to 8GB	Onboard DDR3L 2GB Up to 4 GB (Processor E3845 Only Support 1333MHz)
Expansion	4 x PCIe Gen 3 x1	3 x PCIe1	3 x PCIe1
USB	8 x USB 2.0, 1 x USB 3.2 Gen1	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 III	2 x SATA II
UART	1 x UART	1 x UART	1 x UART
MIO	1 x SMBus, 1 x LPC, 1 x I ² C, 1 x SPI	1 x 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® Elkhart Lake SoC Processor Integrated Intel® UHD Gen11 LP Graphics	Intel® HD Graphics 500	Intel® HD Graphics
Display	DP + (eDP or LVDS)	(HDMI or DP) + (eDP or LVDS)	DDI (HDMI or DP) + LVDS
Audio	Intel® High Definition Audio	Intel® High Definition Audio	Intel® High Definition Audio
Ethernet Chipset	1 x Intel® I226LM/IT	1 x Intel® I210AT	1 x Intel® I211(Commercial)
Power Requirement	+5V	+5V	+5V
Operating Temp.	0°C ~ 60°C (32°F ~ 140°F); -40°C ~ 85°C (-40°F ~ 185°F) for Wide Temperature CPU SKU	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)	2.75" x 2.75" (70 x 70 mm)	2.8" x 2.8" (70 x 70 mm)	2.8" x 2.8" (70 x 70 mm)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B
Software Support	Win 10, Linux	Win 10, Linux, Android	Win 10, Win 7, Win 8, Linux



Model Number	REV-0703 (A/B)	EEV-EX26/ EEV-EX16	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 1 x IET Connector to 2 x USB Type C Module Board at IO (EEV-EX26 Only)	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, 1 x eDP 3 x HDMI, 1 x LVDS (1 x LVDS on Board)	1 x Display Port, 1 x HDMI 1 x LVDS (1 x LVDS on Board)	1 x 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 SPI, 1 x CAN, 1 x LPC, 1 x JFP 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 16bit 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 Temp.	-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 x 170 mm)	9.6" x 9.6" (243.84 x 243.84 mm)	6.7" x 6.7" (170 x 170 mm)	9.6" x 9.6" (243.84 x 243.84 mm)
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B



Model Number	REV-SA01	REV-SA02	REV-SA03
External I/O Connector	1 x HDMI, 1 x VGA 2 x RJ45, 1 x DB9 1 x Mini-USB, 2 x USB Type A	1 x LAN, 2 x RCA, 1 x HDMI, 1 x VGA 1 x Micro SD Socket, 1 x Mini USB (OTG) 1 x USB Type A 2.0 Double Deck 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	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 (Only for PCIe Swith) 1 x BackLight 4P Header 1 x I ² C Touch Screen Connector 1 x MIPI CSI Screen Connector for MIPI Camera (Option) 1 x MIPI DSI (Option) 1 x LVDS Screen Connector (Default) 1 x GPIO 16 bit, 1 x CAN Bus
Power Requirement	+9V ~ 36V DC-in (REV-SA01-02-A1R) +9V ~ 24V DC-in (REV-SA01-03-A1R)	DC +12V	DC +12V
Operating Temperature	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	-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)	146 x 101 mm	170 x 170 mm	165 x 120 mm
Weight	0.13 kg	0.024 kg	0.024 kg
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B
Software Support	N/A	N/A	N/A



Computer-on-Module

SMARC / Open Standard Module

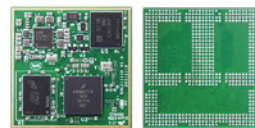
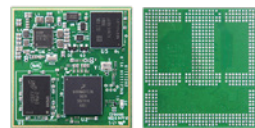


AI Computing Platform

Edge AI Platform



Model Number	SMA-IMX8MP	SMA-3568	SMA-X8I	SMA-IMX6-E
Processor	Quad Cortex®-A53 Processors, Frequency	Rock Chip RK3568 Quad-core Cortex-A55	NXP i.MX 8M Mini	NXP i.MX 6 Dual NXP i.MX 6 Quad Core
System Memory	2GB/ 4GB LPDDR4	2GB/ 4GB/ 8GB LPDDR4	2GB DDR4 (Default)	1GB/ 2GB DDR3
Storage	16GB/ 32GB eMMC	16GB eMMC	eMMC 16GB	eMMC 8GB
Internal I/O Connector	2 x CAN/CAN FD 1 x EDP, 1 x HDMI, 1 x LVDS 2 x MIPI CSI, 1 x MIPI DSI 1 x PCIe 3.0, 4 x UART, 1 x USB (Type C), 2 x USB 3.0 3 x uSDHC, 6 x I²C 3 x SPI	1 x CAN, 14 x GPIO, 4 x I²C 1 x I²S, 1 x SDIO, 2 x SPI 6 x UART, 1 x Wifi 802.11 a/b/g/n/ac 1 x HDMI, 1 x MIPI CSI, 1 x MIPI DSI/LVDS 2 x Giga Ethernet 1 x PCIe 2.1, 1 x PCIe 3.0 1 x USB 3.0 Type A, 1 x USB 3.0 Type A OTG 2 x USB 2.0 Type B	1 x Giga LAN, 8 x GPIO 3 x I²C, 1 x I²S 1 x LVDS (Default), 1 x PCIe 1 x MIPI CSI (Option) 1 x MIPI DSI (Option) 1 x SPI, 1 x UART 4 x USB 2.0, 1 x USB 2.0 OTG	2 x CAN, 12 x GPIO 3 x I²C, 1 x JTAG 1 x MLB150, 3 x PCIe (Option) 2 x RX/TX (Ser1/3), 1 x SATA eMMC 1 x SDIO, 1 x SPDIF 2 x SPI, 2 x UART (Ser0/2) 2 x USB 2.0 Port (One OTG) 1 x WDT
Power Requirement	5V	5V	12V ~ 24V	3V ~ 5.25V - Operates Directly from Single Level Lithium Ion Cells, or Fixed 3.3V or 5V Power Supplies
Operating Temperature	-40°C ~ 85°C (-40°F ~ 185°F)	-40°C ~ 85°C (-40°F ~ 185°F)	Optional Commercial Temp.: 0°C ~ 85°C (32°F ~ 185°F) Industrial Temp.: -40°C ~ 85°C (-40°F ~ 185°F)	Optional Commercial Temp.: 0°C ~ 60°C (32°F ~ 140°F) Industrial Temp.: -40°C ~ 85°C (-40°F ~ 185°F)
Storage Temp.	-40°C ~ 85°C (-40°F ~ 185°F)	-40°C ~ 85°C (-40°F ~ 185°F)	-40°C ~ 85°C (-40°F ~ 185°F)	-40°C ~ 85°C (-40°F ~ 185°F)
Dimension (L x W)	50 x 82 mm	82 x 50 mm	82 x 50 mm	82 x 50 mm
Weight	0.06 kg	0.06 kg	0.06 kg	0.06 kg
Certification	CE, FCC, Class B	CE, FCC, Class B	CE, FCC Class B	CE, FCC Class B
Software Support	Android 11	Linux Debian 11, Android 11	Android 9.0, Yocto 2.5	Android 4.4, Yocto 2.1



Model Number	OSM-3568	OSM-IMX8MM
CHIPSET	Rockchip RK3568	NXP iMX8M Mini
Processor	NXP iMX8M Mini Quad-core Cortex-A55	NXP iMX8M Mini Quad-core Cortex-A55
Software Support	Yocto (Linux)/ Android	Yocto (Linux)/ Android
System Memory	2GB	2GB
Storage	16GB eMMC 5.1	8GB eMMC 5.1
I/O	1 x Audio Output 1 x BT, 1 x eDP, 2 x GbE LAN port 1 x HDMI, 1 x MIPI DSI, 2 x USB 2.0 1 x USB 3.0, 1 x USB 3.0 OTG, 1 x Wifi 802.11 a/b/g/n/ac	1 x A-MIC, 16 x GPIO, 4 x I²C 1 x JTAG, 1 x MIPI DSI, 1 x PCIe 2.1 3 x SAI, 2 x SDIO, 1 x SPDIF 1 x SPI, 4 x UART, 2 x USB 2.0 Type B
Power Requirement	5V	5V
Operating Temperature	Consumer: 0°C ~ 70°C (32°F ~ 158°F) Industrial: -20°C ~ 85°C (-4°F ~ 185°F)	Consumer: 0°C ~ 70°C (32°F ~ 158°F) Industrial: -20°C ~ 85°C (-4°F ~ 185°F)
Dimensions	45 x 45 mm (Size-L)	45 x 45 mm (Size-L)
Certification	CE, FCC Class B	CE, FCC Class B



Model Number	AIB-NVAO	AIB-NIAO	AIB-NW01
Processor	Jetson AGX Orin 32GB Jetson AGX Orin 64GB	Jetson AGX Orin 32GB Jetson AGX Orin 64GB	Nvidia Jetson Orin Nano/ NX
AI Performance	64GB-275 TOPS 32GB-200 TOPS	64GB-275 TOPS 32GB-200 TOPS	Nano 4GB: 20 TOPS Nano 8GB: 40 TOPS NX 8GB: 70 TOPS NX 16GB: 100TOPS
System Memory	32GB/ 64GB	32GB/ 64GB	Nano: 4GB/ 8GB NX: 8GB/ 16GB
Storage	64GB eMMC 5.1	64GB eMMC 5.1	128GB SSD
Expansion	1 x M.2 M Key 1 x mPCIe 1 x Nano SIM Slot	1 x M.2 B Key 1 x M.2 M Key 1 x MicroSD Card Slot 2 x mPCIe 4 x Nano SIM Slot	1 x M.2 B Key 1 x M.2 E Key 1 x MicroSIM
External I/O Connector	4 x 10/100/1000 RJ45 Powered LAN 5 x CAN FD 2 x GMSL2 8 x GPIO (4 x In, 4 x Out) 1 x HDMI 2.0 TypeA 1 x M.2 M Key 1 x mPCIe 1 x Nano SIM Slot 1 x Power Key 1 x Recovery Key 1 x Reset Key 6 x RS-232/422/485 Debug 3 x SYNC I/O (SYNC_IN/SYNC_OUT/SYNC_PPS) 2 x USB3.0 TypeA	5 x 10/100/1000 RJ45 Powered LAN 2 x CAN FD 16 x GPIO (8 x In, 8 x Out) 1 x HDMI 2.0 (TypeA) 1 x M.2 B Key 1 x M.2 M Key 1 x MicroSD Card Slot 2 x mPCIe 4 x Nano SIM Slot 1 x Power Key 1 x Recovery Key 6 x RS-232/422/485 Debug 4 x SYNC I/O (SYNC_IN/SYNC_OUT/SYNC_PPS) 1 x USB 2.0 Type C 4 x USB 3.0 Type A	2 x 10/100/1000 RJ45 LAN 1 x DC Phoenix 1 x HDMI 2.0 Type A 1 x M.2 B Key 1 x M.2 E Key 1 x MicroSIM 1 x Micro USB OTG 1 x Power LED 1 x Reset 2 x RS-232/485 DB9 (Jumper) 4 x USB 3.0 Type A
Protection	IP5X (Default), IP65 (Optional)	IP5X	N/A
Power Requirement	DC 9V ~ 36V	DC 12V ~ 48V	DC 10V ~ 24V
Operating Temperature	-25°C ~ 70°C (-13°F ~ 158°F)	-20°C ~ 60°C (-4°F ~ 140°F)	-10°C ~ 60°C (14°F ~ 140°F)
Storage Temperature	-40°C ~ 80°C (-40°F ~ 176°F)	-40°C ~ 80°C (-40°F ~ 176°F)	-40°C ~ 80°C (-40°F ~ 176°F)
Dimension (L x W x H)	276 x 214 x 71 mm	226 x 144.5 x 70 mm	196 x 125 x 66.1 mm
Weight	4.3 kg	2.3 kg	1.41 kg
Certification	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A
Software Support	Ubuntu Jetpack Above 5	Ubuntu Jetpack Above 5	Ubuntu 20.04, Jetpack Above 5

Compact Computing System



Model Number	EPC-RPU	EPC-EHL/ EPC-EHL-8COM/ 8USB/ 4LAN	EPC-WHL	EPC-TGU
Board	ECM-RPL	ECM-EHL	ECM-WHL	ECM-TGU
Processor	13th Gen Core™ i7/i5/i3 BGA Processor	Intel® ATOM® Processor x64i3E Processor	8th Generation Intel® Core™ i7/i5/i3/ Celeron® Processor	11th Generation Intel® Core™ i7/i5/i3/ Celeron® Processor
System Memory	1 x 262P SO-DIMM Socket (Capacity Max. up to 32GB DDR5 4800)	1 x 260-Pin SO-DIMM Socket, Max. up to 32GB DDR4 3200MHz	2 x 260-Pin DDR4 2400MHz SO-DIMM Socket up to 64GB	1 x 260-Pin SO-DIMM Socket, Max. up to 32GB DDR4 3200MHz
Expansion	1 x M.2 Key-B 2242/3042/3052 w/SIM Slot 1 x M.2 Key-M 2280 (PCIe Gen 4x4) 1 x M.2 Key-E 2230 (CNVi)	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, w/ SIM Slot) 1 x M.2 (Key-E, 2230, CNVi)	1 x M.2 (Key-M, 2242) 1 x M.2 (Key-B, 2242/3042/3052, w/ SIM Slot) 1 x M.2 (Key-E, 2230)
Storage	1 x 2.5" Drive Bay (7mm) 1 x M.2 Key-B 2242 SSD (SATA3) 1 x M.2 Key-M 2242/2280 NVMe (PCIe Gen 4x4)	1 x 2.5" Drive Bay (7mm) 1 x M.2 (Key-B, 2242)	1 x 2.5" Drive Bay (7 mm) 1 x M.2 (Key-B, 2242)	1 x 2.5" Drive Bay (7 mm) 1 x M.2 (Key-M, 2242, NVMe) 1 x M.2 (Key-B, 2242)
USB	3 x USB 2.0, 3 x USB 3.2 Gen2 (Type A) 1 x USB 3.2 Gen 2 (Type C)	2 x USB 3.1, 2 x USB2.0 2 x USB 3.1, 6 x USB2.0 (EPC-EHL-8USB)	4 x USB 3.1	4 x USB 3.1 Gen.2 2 x USB 2.0
COM Port	2 x RS232	8 x RS232 (EPC-EHL-8COM) 4 x RS232 (EPC-EHL-8USB) 2 x RS232 (EPC-EHL-4LAN)	1 x RS232 (Factory Option)	2 x RS232/422/485 (BIOS)
Other	6 x Antenna Mounting with Dust Protection Cover	USB/ LAN 2 x Antenna Mounting with Dust Protection Cover (EPC-EHL) 4 x Antenna Mounting with Dust Protection Cover (EPC-EHL-8COM/ 8USB/ 4LAN)	2 x Antenna Mounting with Dust Protection Cover	2 x Antenna Mounting with Dust Protection Cover
Display Chipset	Intel® Iris® Xe Graphics Eligible	Intel® UHD Graphics for 10th Gen Intel® Processors	Intel® UHD Graphics 620 (i7/i5/i3) Intel® UHD Graphics 610 (Celeron)	Intel® Iris® Xe Graphics (i7/i5) Intel® Iris® UHD Graphics (i3/ Celeron)
Resolution	1 x HDMI 2.0b: 4096 x 2160 @ 60Hz 1 x DP 2.1: 7680 x 4320 @ 60Hz 1 x DP (Type C): 5120 x 3200 @ 60Hz	1 x HDMI 2.0b: 4096 x 2160 @ 60Hz 1 x DP 1.4a: 4096 x 2160 @ 60Hz	2 x HDMI 1.4: 4096 x 2160 @ 24Hz	DP++ 1.4a: 4096 x 2304 @ 60Hz
Audio Chipset	Realtek Audio Code	Realtek Audio Code	Realtek Audio Code	Realtek Audio Code
Audio Interface	1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Mic-in	1 x Combo Jack (Mic-in + Line-out)
Ethernet Chipset	2 x Intel® I226LM	2 x Intel® I226-IT 4 x Intel® I226-IT (EPC-EHL-4LAN)	1 x Intel® I211AT 1 x Intel® I219LM	2 x Intel® I226-LM
Ethernet Interface	2 x RJ45	2 x RJ45, 4 x RJ45 (EPC-EHL-4LAN)	2 x RJ45	2 x RJ45
Power Connector	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
Power Requirement	+12V/ +24V	+12V/ +24V	+12V	+12V
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
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)
Adapter	Input: 100 ~ 240Vdc/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter) AC-DC Adapter	Input: 100 ~ 240Vdc/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter) AC-DC Adapter	Input: 100 ~ 240Vdc/ 50 ~ 60Hz Output: 120W Adapter (12V @ 10A Adapter) AC-DC Adapter	Input: 100 ~ 240Vdc/ 50 ~ 60Hz Output: 120W Adapter (12V @ 10A Adapter) AC-DC Adapter
Construction	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal
Dimension (L x W x H)	6.97" x 4.84" x 2.17" (177 x 123 x 55 mm)	6.97" x 4.84" x 2.2" (177 x 123 x 65mm)	6.97" x 4.84" x 2.17" (177 x 123 x 55mm)	6.97" x 4.84" x 2.17" (177 x 123 x 55mm)
Operating Temp.	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) (EPC-EHL/ EPC-EHL-8COM) -40°C ~ 60°C (-40°F ~ 140°F) (EPC-EHL-8USB) -10°C ~ 40°C (14°F ~ 104°F) (EPC-EHL-4LAN)	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 (32°F ~ 122°F) with air flow
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B

Model Number	EPS-RPS	EPS-ADS	ACS10-TGU
Board	EBM-ADS	EBM-ADS	ECM-TGUC
Processor	Intel® Core™ i9-13900TE, i7-13700TE, i5-13500TE, i3-13100TE	Intel® Core™ i9-12900TE, i7-12700TE, i5-12500TE, i3-12100TE Intel® Pentium G7400TE, Intel® Celeron G6900TE	Intel® Core™ i5-1135G7 Intel® Core™ i3-1115G4
System Chipset	Intel® H610E Express Chipset Intel® Q670E Express Chipset	Intel® H610E Express Chipset Intel® Q670E Express Chipset	N/A
System Memory	2 DIMM Dual Channel DDR5 4800MHz up to 64GB	2 DIMM Dual Channel DDR5 4800MHz up to 64GB	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/ USB 3.2 Gen.1 and Internal Nano SIM Slot1 1 x M.2 Key-E 2230 PCIeIII x1/ USB 2.0 for Wi-Fi & BT Modules	1 x mPCIe (Default) 1 x M.2 Key-B 2242/3042/3052 Support SATA3/ PCIeIII x1/ USB 2.0/ USB 3.2 Gen.1 and Internal Nano SIM Slot1 1 x M.2 Key-E 2230 PCIeIII x1/ USB 2.0 for Wi-Fi & BT Modules	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 x 4 (NVMe SSD), RAID 0/1 (O670 Only) 1 x M.2 Key-B 2242, Support SATA (Share with Expansion Slot)	1 x 2.5" Drive Bay 1 x M.2 Key-M 2242/2280, Support PCIe Gen IV x 4 (NVMe SSD), RAID 0/1 (O670 Only) 1 x M.2 Key-B 2242, Support SATA (Share with Expansion Slot)	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, 6 x USB 3.2	3 x USB 3.2 Gen.2 3 x USB 2.0
COM Port	2 x RS-232 4 x RS-232/422/485	2 x RS-232 4 x RS-232/422/485	1 x RS-232/422/485 1 x RS-232
Display Chipset	Intel® 13th Generation CPU Integrated	Intel® 12th Generation CPU Integrated	Intel® Iris® Xe Graphics (i5-1135G7) Intel® UHD Graphics for 11th Gen Intel® Processors (i3-1115G4)
Display Resolution	HDMI 2.0b: 4096 x 2304 @ 60Hz DP++ 1.4: 4096 x 2304 @ 60Hz	HDMI 2.0b: 4096 x 2304 @ 60Hz DP++ 1.4: 4096 x 2304 @ 60Hz	DP++ 1.4: 4096 x 2304 @ 60Hz
Audio Chipset	Realtek Audio Code	Realtek Audio Code	Realtek Audio Code
Audio Interface	1 x Mic-in 1 x Line-out	1 x Mic-in 1 x Line-out	1 x Mic-in 1 x Line-out
Ethernet Chipset	1 x Intel® I219-LM 1 x Intel® I226-LM	1 x Intel® I219-LM 1 x Intel® I226-LM	1 x Intel® I219LM 1 x Intel® I225-V
Ethernet Interface	2 x RJ45	2 x RJ45	2 x RJ45
Power Connector	5-Pin Terminal Block	5-Pin Terminal Block	Lockable DC Jack
Power Requirement	DC in Typical 12V/ 24V, Wide Voltage	DC in Typical 12V/ 24V, Wide Voltage	+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
Power Mode	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	215.8 x 202.5 x 75 mm	188 x 120 x 48 mm
Operating Temp.	With Extended Temperature Peripherals w/ Air Flow: -10°C ~ 55°C (14°F ~ 131°F)	With Extended Temperature Peripherals w/ Air Flow: -10°C ~ 55°C (14°F ~ 131°F)	0°C ~ 50°C (32°F ~ 122°F) with 0.5m/s Air Flow
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class A, UKCA



Computing System

Compact Computing System



Model Number	NUC-RPU	NUC-TGU	NUC-EHL	NUC-APL	NUC-APL-Slim
Processor	13th Generation Intel® Core™ i7/i5/i3 BGA 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	1x 262-Pin SO-DIMM Socket Max. up to 32GB DDR5 4800MHz	1x 260-pin SODIMM socket Max. up to 64GB DDR4 3200 MT/s	1x 260-pin SODIMM Socket Max. up to 64GB DDR4 3200 MT/s	1x 204-pin SO-DIMM Socket, Max. up to 8GB DDR3L 1866MHz	1x 204-pin SO-DIMM Socket, Max. up to 8GB DDR3L 1866MHz
Expansion	1x M.2 Key-E 2230 (PCIe, USB 2.0) 1x M.2 Key-B 2242/3042/3052 with Internal SIM Slot (PCIe, SATA, USB 3.0, USB 2.0) 1x M.2 Key-M 2280 (PCIe4x4)	1x M.2 (Key-M, 2280) 1x M.2 (Key-B, 2242/3024/3052, w/SIM Slot) 1x M.2 (Key-E 2230)	1x M.2 (Key-B, 2242/3042, w/ SIM Slot) 1x M.2 (Key-B, 2242) 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) 1x M.2 (Key-E, 2230)
Storage	1x M.2 Key-M 2280 NVMe 1x M.2 Key-B 2242 SSD	1x M.2 (Key-M, 2280, NVMe) 1x M.2 (Key-B, 2242)	1x M.2 (Key-B, 2242)	1x 2.5" Drive Bay (7 mm) 1x M.2 (Key-B, 2242)	1x M.2 (Key-B, 2242)
USB	4x USB 3.2 Gen 2x1 2x USB 3.2 Gen1 2x USB 2.0	4x USB 3.2 Gen.2, 2x USB 2.0	4x USB 3.2 Gen.2, 2x USB 2.0	4x USB 3.0 (5Gbps)	4x USB 3.0 (5Gbps)
COM Port	2x RS-232/422/485 (BIOS)	2x RS-232/422/485 (BIOS)	2x RS-232/422/485 (BIOS)	1x RS-232/422/485 (BIOS & Cable) 1x RS-232	1x RS-232/422/485 (BIOS & Cable)
Other	1x Power on/off Button w/ LED 1x LED for Storage, WLAN, WWLAN 1x Kensington Lock	1x Power on/off Button w/ LED 1x LED for Storage/ WLAN/ WWLAN 4x Antenna Mounting with Dust Cover 1x Kensington Lock	1x Power on/off Button w/ LED 1x Storage LED 4x Antenna Mounting with Dust Cover 1x Kensington Lock 1x Micro SD Slot	1x Power on/off Button w/ LED 1x Storage LED 2x Antenna Mounting with Dust Cover	1x Power on/off Button w/ LED 1x Storage LED 2x Antenna Mounting with Dust Cover
Display	4x HDMI 2.0b: Max. Resolution 4096 x 2304 @ 60Hz	2x HDMI 2.0b: Max. Resolution 4096 x 2304 @ 60Hz	2x HDMI 2.0b: 4096 x 2304 @ 60Hz	2x HDMI 1.4b: Max. Resolution 3840 x 2160 @ 30Hz 1x DP (DVI-I/ VGA Factory Option): Max. Resolution 1920 x 1080 @ 60Hz	2x HDMI 1.4b: Max. Resolution 3840 x 2160 @ 30Hz *1x 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 1x Mic-in, 1x Line-out	Realtek Audio Code 1x Mic-in, 1x Line-out	Realtek Audio code 1x Mic-in, 1x Line-out	Realtek Audio Code 1x Audio Jack (Mic-in + Line-out Combo)	Realtek Audio Code 1x Audio Jack (Mic-in + Line-out Combo)
Ethernet	1x Intel I226V, 1x Intel I219LM	1x Intel I225LM, 1x Intel I219LM	2x Intel I225LM	2x Realtek RTL8111E Gigabit	2x Realtek RTL8111E Gigabit
Power Connector	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
Power Requirement	+12V	+12V	+12V	+12V	+12V
Power Mode	ATX	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 ~ 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 ~ 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	Aluminum + Metal
Mounting Kit	Stand/ Din Rail/ VESA	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)	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	1 kg	0.85 kg	0.72 kg
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class A	CE, FCC Class A



Computing System

ARM-based System



Model Number	AIB-3566	AIB-3588	AIB-IMX6	AIB-IMX6A	AIB-IMX8M
Processor	Rockchip RK3566 Quad-core ARM Cortex-A55	Rockchip RK3588 Quad-core ARM Cortex-A76 and Quad-core ARM Cortex-A55	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	2GB DDR	4GB LPDDR4/ LPDDR4x/ LPDDR5	1 GB LPDDR3	1 GB LPDDR3	2 GB LPDDR4
Storage	32 GB eMMC 5.1	64GB eMMC 5.1	4GB eMMC	8GB eMMC	16GB eMMC
External I/O Connector	1x 10/100/1000 RJ45 Powered LAN 1x BT 4.1 1x HDMI 2.0 In 1x HDMI 2.0 Out 1x IR or 1x RS 232 1x USB 2.0 Type B OTG 1x USB 3.0 Type A 1x WIFI 802.11 a/b/g/n/ac 1x Micro SIM BT 5.0 (Optional) 3G/4G 1x mPCIe +1x Micro SIM (Optional)	2 x 10/100/1000 RJ45 Powered LAN 1x CAN 4x GPIO 1x HDMI 2.0 in 2x HDMI 2.0 out 1x IR 4x LED (HDD, WIFI, Power, NET) 1x Micro SD Slot 1x Micro SIM Slot 1x Power Key 1x USB 3.0 Type A 3x USB 2.0 Type C 1x Recovery Key 3x RS-232/RS485 2x WIFI Antenna 1x GTIOT (Optional) 1x PoE (Optional)	1x 10/100/1000 RJ45 Powered LAN 1x HDMI 2.0 out 1x Micro SD Slot 1x USB 2.0 Type A 1x Jack for I/R Extender Cable, Co-design (Optional) 1x with on Board I/R Sensor (Optional)	2 x 10/100/1000 RJ45 Powered LAN 1x HDMI 2.0 out 1x Micro SD Slot 1x Mini USB 3x RS-232/422/485 DB9 1x RS-232/422/485 Debug 2x USB 2.0 Type A 1x Jack for I/R Extender Cable, Co-design (Optional) 1x with on Board I/R Sensor (Optional)	2 x 10/100/1000 RJ45 1x HDMI 2.0 out 1x Headphone Jack 1x Micro SD Slot 1x USB 3.0 Type A 1x USB 3.0 Type C
Power Requirement	DC 12V/ 1.5A	DC 12V	DC 12V ~ 24V, 2.5mm DC Jack, Typical 19V Input With Brownout Detection or Powered LAN (Optional)	DC 12V ~ 24V, 2.5mm DC Jack, Typical 19V Input With Brownout Detection	DC 12V ~ 24V, Terminal Block
Operating Temperature	-20°C ~ 70°C (-4°F ~ 158°F)	-20°C ~ 60°C (-4°F ~ 140°F)	-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)	-40°C ~ 85°C (-40°F ~ 185°F)	-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)	106 x 100 x 25 mm	160 x 125.5 x 48 mm	153 x 107.8 x 30 mm	186 x 121.35 x 37 mm	177 x 112 x 53.5 mm
Weight	2.58 kg	0.46 kg	1.5 kg	1.0 kg	2.0 kg
Certification	CE, FCC Class A	CE, FCC Class A	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B
Software Support	Android 11.0 Linux Debian 10	Android 13 Linux Debian 11.0	Android 4, 4 or 6.0 Yocto 2.1	Yocto 1.7 / 2.5	Android 9.0 Linux Yocto 2.5

Modular Computing System



Model Number	EMS-MTU	EMS-EHL	EMS-TGL	EMS-SKLU
Processor	Intel® MTL-U/H Core™ Ultra 7 Intel® MTL-U/H Core™ Ultra 5	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	2 x 262-Pin SODIMM DDR5 5600MHz up to 64GB	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 Avalue IET Module Interface 1 x M.2 Key-B 2242/3042/3052 (SATA3 / PCIe Gen4 x1/ USB3.2 Gen2) w/ SIM Slot (Internal) 1 x M.2 Key-E 2230 for Wi-Fi & BT Module (USB 2.0/ PCIe Gen4 x1)	1xIETInterface(1xDDI, 2xPCIeIIIx2, 3xUSB2.0 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 x 2, 3 x USB2.0, 1 x Line-out (R/L), 1 x SMBus, LPC) 1 x Line-out (R/L), 1 x SMBus) 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-M 2280 (1 x PCIe Gen4x4), Support NVMe 1 x M.2 Key-B 2242 (SATA), Share with Expansion Slot	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 USB2.0, 4 x USB 3.2 Gen.1	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 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	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)	1 x 8-bit GPIO (DB9), Optional	1 x 8-bit GPIO (DB9)	1 x 12-bit GPIO
Display Chipset	Intel® Xe LPG Graphics	Intel® UHD Graphics	Intel® Iris® Xe Graphics (Core i7/i5) Intel® UHD Graphics (Core i3)	Intel® HD Graphics 520/510
Display Resolution	1 x DP++1.4: 4096 x 2304 @ 60Hz 2 x HDMI 2.0b: 4096 x 2304 @ 60Hz	1 x DP++ 1.4: 4096 x 2304 @ 60Hz 1 x HDMI 2.0b: 4096 x 2304 @ 60Hz	1 x DP++ 1.4: 4096 x 2304 @ 60Hz 1 x HDMI 2.0b: 4096 x 2304 @ 60Hz	1 x DP+1.2: 4096 x 2304 @ 60Hz
Audio Chipset	Realtek Audio Code	Realtek Audio Code	Realtek Audio Code	Realtek Audio Code
Audio Interface	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-in, Line-out
Ethernet Chipset	2 x Intel® I226-IT	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	2 x RJ45
Power Connector	3-Pin Terminal Block	3-Pin Terminal Block	3-Pin Terminal Block	3-Pin Terminal Block
Power Requirement	Typical +12/ 24Vdc (+9V ~ +36Vdc)	Typical +12/ 24 Vdc (+9V ~ +36Vdv)	Typical +12/ 24 Vdc (+9V ~ +36Vdv)	Typical +12/ 24Vdc (+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	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)
Adapter	Optional AC-DC Adapter (60W/120W)	Optional AC-DC Adapter (60W)	Optional AC-DC Adapter (60W)	Optional AC-DC Adapter (60W)
Construction	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal
Dimension (L x W x H)	240 x 150 x 49 mm (Standard) 240 x 150 x 75 mm (w/ IET Module)	240 x 150 x 48 mm (Standard) 240 x 150 x 69 mm (w/ IET Module)	240 x 150 x 48 mm (Standard) 240 x 150 x 69 mm (w/ IET Module)	240 x 151.5 x 45 mm (Standard) 240 x 151.5 x 60 mm (w/ IET Module)
Operating Temp.	-40°C ~ 70°C (w/SSD) Ambient w/ Air Flow, MTL-U Sku -40°C ~ 50°C (w/SSD) Ambient w/ Air Flow, MTL-H 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	-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	CE Class B, FCC Class B, UKCA	CE, FCC Class B, LVD 62368-1	CE, FCC Class B	CE, FCC Class A

Expandable Computing System



Model Number	SLP-WHG
Processor	Onboard 8th Gen Intel® Core™ SoC i7-8665UE/ i5-8365UE/ i3-8145UE & Celeron® 4305UE BGA Processor
System Chipset	N/A
System Memory	2 x 260-pin SODIMM Socket Max. up to 32GB DDR4 2133MT/s
Expansion	1 x PCIe x1 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)
USB	3 x USB3.1 Gen1 1 x USB Type C w/o ALT Mode
COM Port	4 x RS-232
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
Display	3 x HDMI 1.4b: 3840 x 2160 @ 30Hz
Audio	N/A
Ethernet	1 x Intel® I219-LM 1 x Intel® I210-IT
Power Connector	Phoenix Connector
Power Requirement	DC in +12V ~ +24V, Wide Voltage
Power Mode	AT/ ATX (ATX is Default Setting)
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 180W Adapter (24V @ 7.5A)
Operating Temperature	-20~50°C (-4°F ~ 122°F) w/ WT SSD, Ambient w/ 0.5m/s Air Flow
Storage Temperature	-40°C ~ 75°C (-40°F ~ 167°F)
Construction	Aluminum + Metal
Mounting Kit	N/A
Dimension (L x W x H)	217 x 115 x 220 mm
Weight	2.6 kg



SLP-WHG
w/ TSN Card

TSN Solution

- Industrial Internet of Things (IIoT)
- Application on non-RT (IT Use) & RT OS (OT Use)
- Quad Port TSN Gigabit Ethernet Switch
- OS Support : Linux Ubuntu

Challenge	Solution
TSN Supported	Integrated & Qualified 3rd Party TSN Network Card
Protocol Support	IEEE 802.1AS-Rev/ AS IEEE 1588V2
Cost Issue	Low Cost of Implementation



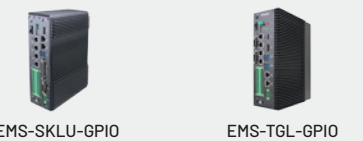
BMX-T550
w/ EtherCAT Controller

SLP-WHG
w/ EtherCAT Controller

EtherCAT Solution

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

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



EMS-SKLU-GPIO

EMS-TGL-GPIO

Machine Vision Solution

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

Challenge	Solution
Wide Voltage	9-36V
Harsh Environment	Fanless and Rugged Design
Power Requirement	44-bit GPIO, Supports 1.5KV Isolation



Computing System

Barebone System



Computing System

Rackmount System

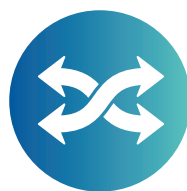
Avalue offers several different kinds of desktop chassis to create custom-made products according to exact specifications of clients for mother boards, PSUs, coolers, add on cards and accessories. Most of our chassis may provide enclosure for Mini-ITX form factor and even Micro ATX Motherboard. We also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

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.

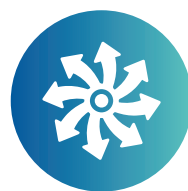
Essential Professional Capabilities and Key Attributes



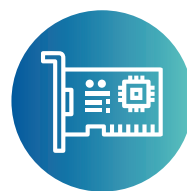
Configure to order



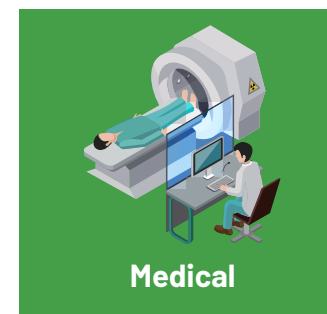
Flexible customer service



Multiple combination



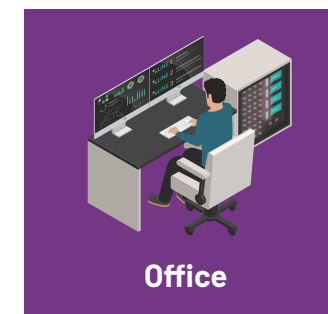
PCIe Expansion



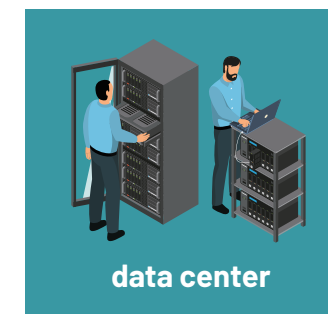
Medical



Smart Factory



Office



data center



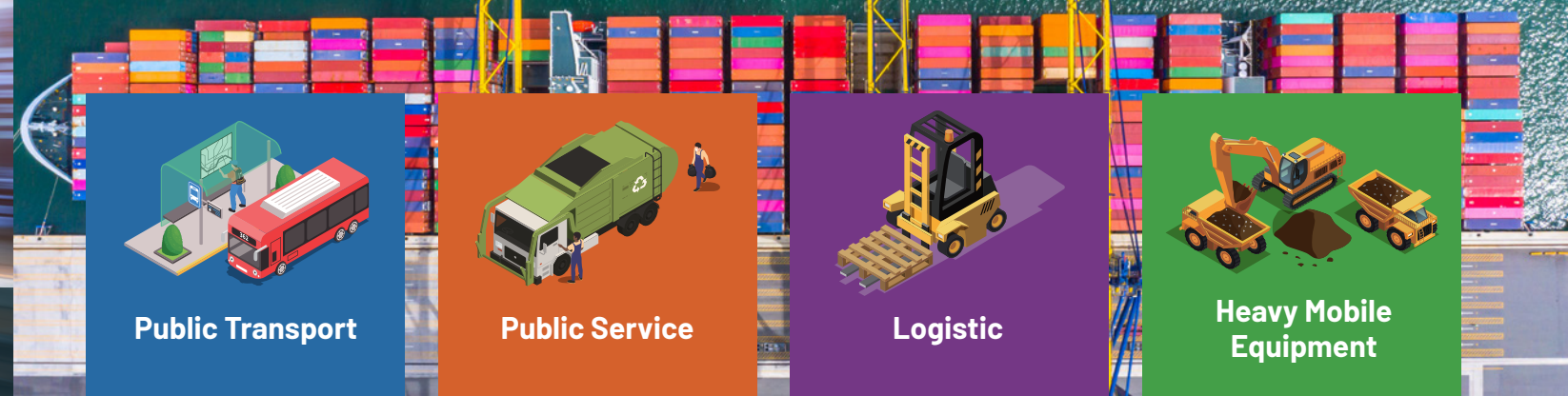
Supplier	Desktop Chassis				Medical Box	
Model Name	BMX-T550	BMX-T540	BMX-T820	ACS40-ADP	MAB-T660	MAB-T600
M/B Form Factor	Up to 6.7"(W)x 6.7"(D) Mini ITX Compliant MB	Up to 6.7"(W)x 6.7"(D) Mini ITX Compliant MB	Up to 6.7"(W)x 6.7"(D) Mini ITX Compliant MB	Up to 6.7"(W)x 6.7"(D) Thin Mini ITX compliant 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
Color	Black	Black	Black	Black	White	White
Dimension (W x D x H)	280 x 75 x 265 mm	372 x 307 x 107 mm	215 x 210 x 55mm	210 x 206 x 55 mm	315 x 272 x 88 mm	330.2 x 341 x 160 mm
Drive Bay	Internal 2 x 2.5"	Internal 2 x 2.5"	Internal 1 x 2.5"	Internal 1 x 2.5"	Internal 1 x 2.5"	Internal 2 x 3.5"
Expansion Slot	1 Full Height Via Riser Card	2 Full Height Via Riser Card	N/A	N/A	2 Half Height Via Riser Card	4 full height expansion
System Cooling	60 x 60 x 25mm Fan	70 x 70 x 15mm Fan	40 x 40 x 15 mm	40 x 40 x 20mm fan	91 x 87.5 x 64.6mm Fan	70 x 70 x 15mm fan (TBD)
Front I/O	2 x USB Ports	2 x USB Ports	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	System Power on/off	System Power on/off
LED	Power LED HDD LED	Power LED HDD LED LAN LED	Power LED HDD LED	Power LED HDD LED	Power LED	Power LED
Security	Depend on M/B	Depend on M/B	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	Depend on CPU TDP	Depend on CPU TDP
Power Supply	220W 1U Flex ATX Power Supply	400W ATX Power Supply	Typical 12/24Vdc (+9V ~ +36V)	500W ATX Power Supply (Medical Grade)	250W ATX Power Supply (Medical Grade)	500W ATX Power Supply (Medical Grade)
Operating Temp.	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	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
Gross Weight	3.5 kg	6.4 kg	TBD	TBD	TBD	7 kg

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 28 mm Fans	2 x 80 x 25 mm Fans 1 x 97 mm Blower (Rear)	2 x 80 x 25 mm Fans 1 x 97 mm 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	7.5 kg	18 kg	20 kg



Computing System

Transportation System



Public Transport

Public Service

Logistic

Heavy Mobile Equipment



Model Number	VMS-EHLR	VMS-ADPS	VMS-CFS	VMS-CFS-PSE	VMS-APL	EMS-TGL-Marine	EMS-SKLU-Marine
Processor	Intel® Atom® x6425E	Intel® Core™ i7-1255UL/ i5-1235UL/ i3-1215UL & Celeron® 7305L	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	Intel® Core™ i7-6600U/ i5-6300U/ i3-6100U & Celeron® 3955U
System Memory	1 x 260-Pin SODIMM DDR4 3200MHz up to 32GB	2 x 262-Pin SODIMM DDR5 4800MHz Up to 64GB	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 8GB	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 M.2 Key-B 3042/3052 (PCIe/ USB 3.2), w/ SIM Slot2 (External) 1 x M.2 Key-E 2230 (PCIe/ USB 2.0) 1 x Full Size Mini PCIe (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 2 x mPCIe (PCIe/ USB2.0), w/ SIM Slot (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 (CNVI)	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) 1 x M.2 Key-M 2280 (PCIe4)	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 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 1 x USB 2.0 (M12 A-coded)	2 x USB 2.0 2 x USB 3.2 Gen.2	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 RS-232/422/485 (Jumper + DIP Switch) 2 x RS-232/422/485 (Jumper + DIP Switch)	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 CAN 2.0B (DB9), Optional	2 x SIM Card Slot (External) 8 x Antenna Mounting w/ Dust Cover	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 10-bits GPIO	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® Iris® Xe Graphics (i7-1255UL/ i5-1235UL) Intel® UHD Graphics (i3-1215UL/ Celeron® 7305L)	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	1 x DP++ 1.4: 4096x2304 @ 60Hz 1 x HDMI 2.0 : 4096 x 2304 @ 60Hz 1 x VGA: 1920 x 1080 @ 60Hz (Optional)	2 x DP++ 1.4: 4096x2304 @ 60Hz 2 x HDMI 2.0: 4096 x 2304 @ 60Hz	1 x DP 1.2: 4096 x 2160 @ 60Hz w/HDR 2 x HDMI 1.4: 4096 x 2160 @ 30Hz 1 x LVDS: 1920 x 1200 @ 60Hz	1 x DP 1.2: 4096 x 2160 @ 60Hz w/HDR 2 x HDMI 1.4: 4096 x 2160 @ 30Hz 1 x LVDS: 1920 x 1200 @ 60Hz	1 x DP: 4096 x 2160 @ 60Hz 1 x LVDS: 1920 x 1200 @ 60Hz	1 x DP++ 1.4: 4096 x 2304 @ 60Hz 1 x HDMI 2.0b: 4096 x 2304 @ 60Hz	1 x DP+1.2: 4096 x 2304 @ 60Hz
Audio Interface	Mic-in, Line-out, Line-in (DB15)	1 x Mic-in, 1 x Line-out	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® I210-IT	4 x Intel® I226IT	1 x Intel® I211-AT 1 x Intel® I219-LM	1 x Intel® I211-AT 1 x Intel® I219-LM 4 x Intel® WG82574L	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	4 x RJ-45 (PoE for Option)	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/ 24/ 48 Vdc (+9 ~ 60V)	Typical 12/ 24Vdc (+9V ~ +36V)	Typical 12/ 24Vdc (+9V ~ +36V)	Typical 12/ 24Vdc (+9V ~ +36V)	Typical 12/ 24Vdc (+9V ~ +36V), 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 (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	239.4 x 160 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	Standard System: -40°C ~ 70°C (-40°F ~ 158°F) with 0.5 m/S Air Flow System with PoE: -40°C ~ 60°C (-40°F ~ 140°F) with 0.5 m/S Air Flow	-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 ~ 60°C (w/SSD) Ambient w/ Air Flow	-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, E24 Mark, ISO7637-2, 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

Transportation Product Highlights

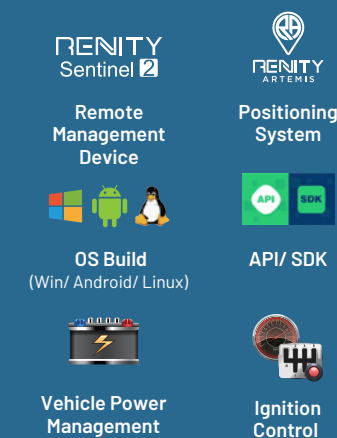
Application Layer

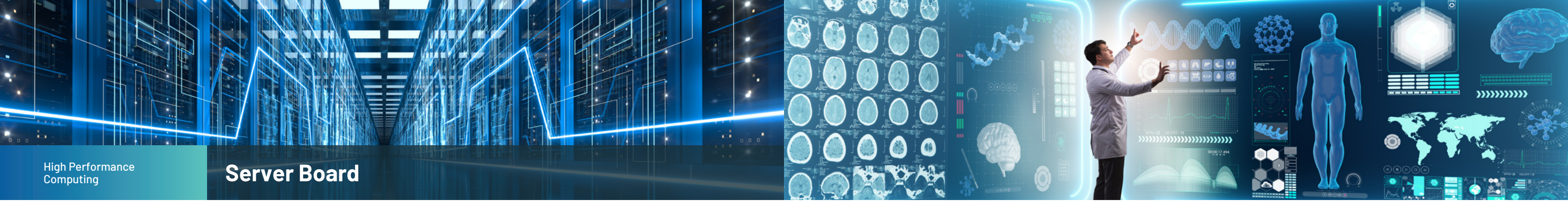


Computing platform



Software layer





High Performance Computing

Server Board

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)



Model Number	HPM-ERSUA	HPM-ERSDE	HPM-SIEUA	HPM-SRSUA	HPM-SRSDE	HPM-621DE	HPM-621UA	HPM-246UA	
Processor	Intel LGA4677 Socket Supports 5th Generation Intel® Xeon® Scalable Processor (Max. TDP at 270W)	Dual Intel LGA4677 Sockets Support 5th Generation Intel® Xeon® Scalable Processor (Max. TDP at 270W Each)	AMD SP6 Socket Supports 4th Generation AMD EPYC Processor (Max. TDP at 225W)	Intel LGA4677 Socket Supports 4th Generation Intel® Xeon® Scalable Processor (Max. TDP at 270W)	Dual Intel LGA4677 Sockets Support 4th Generation Intel® Xeon® Scalable Processor (Max. TDP at 270W each)	Dual Intel FCLGA3647 Sockets Support 1st and 2nd Generation Intel® Xeon® Scalable Processors (Max. TDP at 150W each)	Intel FCLGA3647 Socket Supports 1st and 2nd Generation Intel® Xeon® Scalable Processors (Max. TDP at 150W)	Intel® LGA1151 Socket Supports 8th/ 9th Gen. Core i7/i5/i3/ Pentium/ Celeron/ Xeon E Processors (Max. TDP at 95W)	
System Chipset	Intel® C741 Chipset	Intel® C741 Chipset	N/A	Intel® C741 Chipset	Intel® C741 Chipset	Intel® C621 Chipset	Intel® C621 Chipset	Intel® C246 Chipset	
System Memory	6 x DDR5 5600MHz RDIMM up to 1.5TB	12 x DDR5 5600MHz RDIMM up to 3TB	6 x DDR5 4800/ 4400MHz RDIMM up to 1.5TB	6 x DDR5 4800/ 4400MHz RDIMM up to 1.5TB	12 x DDR5 4800/ 4400MHz RDIMM up to 3TB	12 x DDR4 2933/ 2666/ 2400/ 2133MHz RDIMM/ LRDIMM up to 1.5TB	6 x DDR4 2933/ 2666/ 2400/ 2133MHz RDIMM/ LRDIMM up to 768GB	4 x DDR4 2666MHz ECC and Non-ECC DIMM Support up to 128GB (ECC Memory Supported by Specific CPU SKUs)	
Expansion	4 x PCIe Gen5 x16 Slots and 3 x PCIe Gen5 x4 Slots 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)	7 x PCIe Gen5 x16 Slots 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)	3 x PCIe Gen5 x16 Slots and 4 x PCIe Gen5 x8 Slots Slot 1, PCIe 5.0 x8 Slot 2, PCIe 5.0 x16 Slot 3, PCIe 5.0 x8 Slot 4, PCIe 5.0 x16 Slot 5, PCIe 5.0 x16 Slot 6, PCIe 5.0 x16 Slot 7, PCIe 5.0 x8 (Slot 7 is the Slot Closest to CPU)	4 x PCIe Gen5 x16 Slots and 3 x PCIe Gen5 x4 Slots 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)	7 x PCIe Gen5 x16 Slots 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)	4 x PCIe Gen3 x16 Slots 2 x PCIe Gen3 x8 Slots 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)	1 x PCI 3.0 Slot, 3 x PCIe Gen3 x16 Slots or 6 x PCIe Gen3 x8 Slots Slot 1, PCI 3.0 Slot 2, PCIe 3.0 x8 Slot 3, PCIe 3.0 x16 (x16 will Switch to x8 Automatically when Slot 2 is Used) Slot 4, PCIe 3.0 x8 Slot 5, PCIe 3.0 x16 (x16 will Switch to x8 Automatically when Slot 4 is Used) 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)	1 x PCIe Gen3 x16 Slot, 1 x PCIe Gen2 x8 Slot, 1 x PCIe Gen3 x4 Slot, 1 x PCIe Gen3 x1 Slot 1 x PCI 3.0 Slot 1 x PCI 3.0 Slot 2, PCIe Gen 3.0 x 16 Slot 3, PCIe Gen 2.0 x 8 Slot 4, PCIe Gen 3.0 x 4 Slot 5, PCIe Gen 3.0 x 1 (Slot 5 is the Slot Closest to CPU)	
Display	AST 2600 BMC Controller	AST 2600 BMC Controller	AST 2600 BMC Controller	AST 2600 BMC Controller	AST 2600 BMC Controller	AST 2500 BMC Controller	AST 2500 BMC Controller	Intel® 8/ 9th Generation CPU Integrated AST 2500 BMC Controller	
Resolution	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	3 x DP++ ports DP: 4096 x 2304 @ 60Hz HDMI : 4096 x 2160 @ 30Hz 1 x VGA Port VGA: 1920 x 1200 @ 60Hz 32bpp	
Ethernet	1 x Intel® I210AT Giga-bit Ethernet 1 x Intel® I226-LM 2.5Giga-bit Ethernet 1 x Intel® X550-AT2 10Giga-bit Ethernet	1 x Intel® I210AT Giga-bit Ethernet 1 x Intel® I226-LM 2.5Giga-bit Ethernet 1 x Intel® X550-AT2 10Giga-bit Ethernet	1 x Intel® I210AT Giga-bit Ethernet 1 x Intel® I226-LM 2.5Giga-bit Ethernet 1 x Intel® X550-AT2 10Giga-bit Ethernet	1 x Intel® I210AT Giga-bit Ethernet 1 x Intel® I226-LM 2.5Giga-bit Ethernet 1 x Intel® X550-AT2 10Giga-bit Ethernet	1 x Intel® I210AT Giga-bit Ethernet 1 x Intel® I226-LM 2.5Giga-bit Ethernet 1 x Intel® X550-AT2 10Giga-bit Ethernet	1 x Intel® I210AT Giga-bit Ethernet 1 x Intel® I226-LM 2.5Giga-bit Ethernet 1 x Intel® X550-AT2 10Giga-bit Ethernet	4 x Intel® I210AT Giga-bit Ethernet	4 x Intel® I210AT Giga-bit Ethernet	7 x Intel® I210AT Giga-bit Ethernet
USB/SATA/COM/LAN	10/5/2/5	12/5/2/5	4/4/2/5	10/5/2/5	12/5/2/5	8/10/2/4	8/9/2/4	8/4/2/7	
Power Requirement	1 x Std. 24 Pin ATX Connector 3 x 8 Pin SSI 12V Connectors	1 x Std. 24 Pin ATX Connector 3 x 8 Pin SSI 12V Connectors	1 x Std. 24 Pin ATX Connector 3 x 8 Pin SSI 12V Connectors	1 x Std. 24 Pin ATX Connector 3 x 8 Pin SSI 12V Connectors	1 x Std. 24 Pin ATX Connector 3 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 1 x 8 Pin SSI 12V Connector	1 x Std. 24 Pin ATX Connector 1 x 8 Pin SSI 12V Connector	
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	
Operating Temp.	0 ~ 55°C (32 ~ 131°F) to Support up to 250W TDP CPU 0 ~ 45°C (32 ~ 113°F) to Support up to 270W TDP CPU	0 ~ 50°C (32 ~ 122°F) to Support up to 250W TDP CPU 0 ~ 40°C (32 ~ 104°F) to Support up to 270W TDP CPU	0 ~ 60°C (32 ~ 140°F) (without Intel X550) 0 ~ 55°C (32 ~ 131°F) (with Intel X550)	0 ~ 60°C (32 ~ 140°F) to Support up to 250W TDP CPU 0 ~ 50°C (32 ~ 122°F) to Support up to 270W TDP CPU	0 ~ 50°C (32 ~ 122°F) to Support up to 250W TDP CPU 0 ~ 40°C (32 ~ 104°F) to Support up to 270W TDP CPU	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 x 243.84 mm) PCB Thickness is 2.54 mm	12" x 16.452" (304.8 x 417.88 mm) PCB Thickness is 2.86 mm	12" x 9.6" (304.8 x 243.84 mm) PCB Thickness is 2.0 mm	12" x 9.6" (304.8 x 243.84 mm) PCB Thickness is 2.54 mm	12" x 16.452" (304.8 x 417.88 mm) PCB Thickness is 2.86 mm	12" x 13" (304.8 x 330.2 mm) PCB Thickness is 2.0 mm	12" x 9.6" (304.8 x 243.84 mm) PCB Thickness is 2.0 mm	12" x 9.6" (304.8 x 243.84 mm) PCB Thickness is 2.0 mm	
Weight	2.62 lbs (1.19 kg)	4.85 lbs (2.2 kg)	2.14 lbs (0.97 kg)	2.62 lbs (1.19 kg)	4.85 lbs (2.2 kg)	3.96 lbs (1.8 kg)	2.14 lbs (0.97 kg)	1.54 lbs (0.7 kg)	



High Performance Computing

Rackmount & Tower Workstation



Healthcare
- Precision Diagnosis/
Life Science

Medical
- Advanced Medical
Imaging Technology

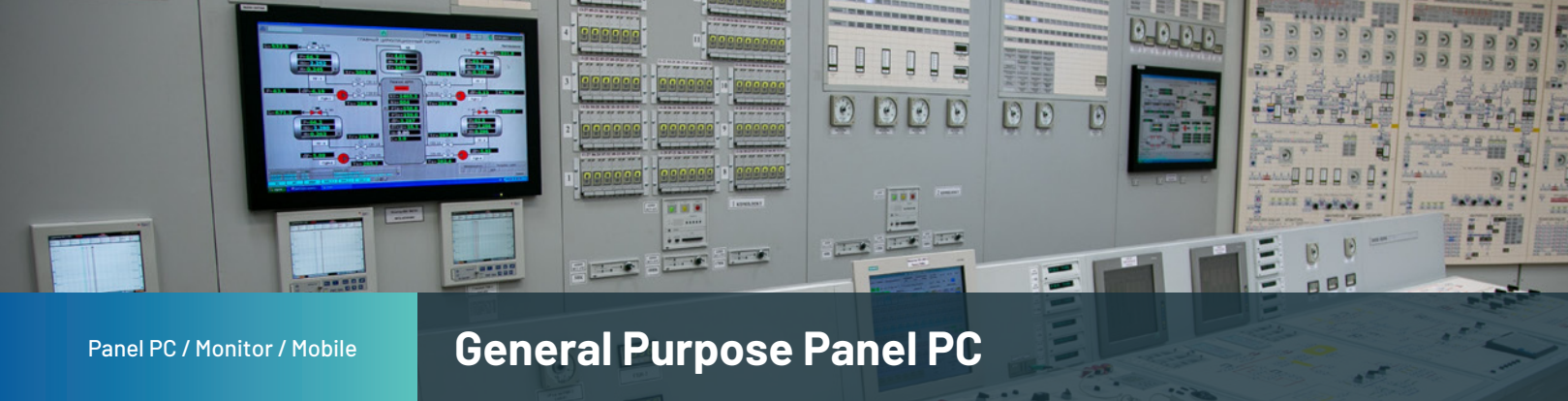
Communication
- Superior Accelerated
Workstation

Smart Manufacturing
- Visualization Machine Vision/
Transformative Analytics

Smart City
- Smart Public Safety and
Enforcement Technology



Model Number	HPS-ERSD4A	HPS-ERSDTA	HPS-ERSU4A	HPS-ERSUTA	HPS-SRSD4A	HPS-SRSDTA	HPS-SRSU4A	HPS-SRSUTA	HPS-621U4A	HPS-621UTA	HPS-621D4A	HPS-621DTA	HPS-246U4A	HPS-246UTA	HPS-621U2A
Processor (CPU Type)	Dual Intel FCLGA4677 Sockets Support 5th Gen. Intel Xeon Scalable Processors (Max. TDP at 270W Each)		Intel LGA4677 Socket Supports 5th Generation Intel® Xeon® Scalable Processor (Max. TDP at 270W)		Dual Intel FCLGA4677 Sockets Support 4th Gen. Intel Xeon Scalable Processors (Max. TDP at 270W Each)		Intel LGA4677 Socket Supports 4th Generation Intel® Xeon® Scalable Processor (Max. TDP at 270W)		Intel FCLGA3647 Socket Supports 1st and 2nd Generation Intel® Xeon® Scalable Processors (Max. TDP at 150W)		Dual Intel FCLGA3647 Sockets Support 1st and 2nd Generation Intel® Xeon® Scalable Processors (Max. TDP at 150W Each)		Intel® LGA1151 Socket Supports 8th/ 9th Generation Core i7/i5/i3/ Pentium/ Celeron/ Xeon E Processors (Max. TDP at 95W)		Intel® FCLGA3647 Socket Supports 1st and 2nd Generation Intel® Xeon Scalable Processors (Max. TDP at 150W)
Chipset	Intel® C741 Chipset		Intel® C741 Chipset		Intel® C741 Chipset		Intel® C741 Chipset		Intel® C621 Chipset		Intel® C621 Chipset		Intel® C246 Chipset		Intel® C621 Chipset
Memory	12 x DDR5 5600MHz RDIMM up to 3TB		6 x DDR5 5600MHz RDIMM up to 1.5TB		12 x DDR5 4800/ 4400MHz RDIMM up to 3TB		6 x DDR5 4800/ 4400MHz RDIMM up to 1.5TB		6 x DDR4 2933/ 2666/ 2400/ 2133MHz RDIMM/ LRDIMM up to 768GB		12 x DDR4 2933/ 2666/ 2400/ 2133 MHz RDIMM/ LRDIMM up to 1.5TB		4 x DDR4 2666MHz ECC and Non-ECC DIMM Support up to 128GB (ECC Memory Supported by Specific CPU SKUs)		6 x DDR4 2933/ 2666/ 2400/ 2133MHz RDIMM/ LRDIMM up to 768GB
Storage	3 x Front Accessible 2.5" Storage Bays		3 x Front Accessible 2.5" Storage Bays		3 x Front Accessible 2.5" Storage Bays		3 x Front Accessible 2.5" Storage Bays		3 x Front Accessible 2.5" Storage Bays		3 x Front Accessible 2.5" Storage Bays		3 x Front Accessible 2.5" Storage Bays		4 x External 5.25" Storage Bays 2 x Internal 3.5" Storage Bays
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
Expansion Slots	7 x PCIe Gen5 x16 Slots Slot 1, PCIe 5.0 x16 from 2nd CPU Slot 2, PCIe 5.0 x16 from 1st CPU Slot 3, PCIe 5.0 x16 from 2nd CPU Slot 4, PCIe 5.0 x16 from 1st CPU Slot 5, PCIe 5.0 x16 from 2nd CPU Slot 6, PCIe 5.0 x16 from 1st CPU Slot 7, PCIe 5.0 x16 from 2nd CPU (Slot 7 is the Slot Closest to CPU)		4 x PCIe Gen5 x16 Slots 3 x PCIe Gen5 x4 Slots 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)		7 x PCIe Gen5 x16 Slots Slot 1, PCIe 5.0 x16 from 2nd CPU Slot 2, PCIe 5.0 x16 from 1st CPU Slot 3, PCIe 5.0 x16 from 2nd CPU Slot 4, PCIe 5.0 x16 from 1st CPU Slot 5, PCIe 5.0 x16 from 2nd CPU Slot 6, PCIe 5.0 x16 from 1st CPU Slot 7, PCIe 5.0 x16 from 2nd CPU (Slot 7 is the Slot Closest to CPU)		4 x PCIe Gen5 x16 Slots 3 x PCIe Gen5 x4 Slots 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)		1 x PCI 3.0 Slot, 3 x PCIe Gen3 x16 Slots or 6 x PCIe Gen3 x8 Slots Slot 1, PCI 3.0 Slot 2, PCIe 3.0 x8 Slot 3, PCIe 3.0 x16 (x16 will Switch to x8 Automatically when Slot 2 is Used) Slot 4, PCIe 3.0 x8 Slot 5, PCIe 3.0 x16 (x16 will Switch to x8 Automatically when Slot 4 is Used) 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)		4 x PCIe Gen3 x16 Slots, 2 x PCIe Gen3 x8 Slots 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)		1 x PCIe Gen3 x16 Slot, 1 x PCIe Gen2 x8 Slot 1 x PCIe Gen3 x4 Slot, 1 x PCIe Gen3 x1 Slot 1 x PCI 3.0 Slot Slot 1, PCI 3.0 Slot 2, PCIe Gen 3.0 x 16 Slot 3, PCIe Gen 2.0 x 8 Slot 4, PCIe Gen 3.0 x 4 Slot 5, PCIe Gen 3.0 x 1 (Slot 5 is the Slot Closest to CPU)		1 x PCI 3.0 Slot, 3 x PCIe Gen3 x16 Slots or 6 x PCIe Gen3 x8 Slots Slot 1, PCI 3.0 Slot 2, PCIe 3.0 x8 Slot 3, PCIe 3.0 x16 (x16 will Switch to x8 Automatically when Slot 2 is Used) Slot 4, PCIe 3.0 x8 Slot 5, PCIe 3.0 x16 (x16 will Switch to x8 Automatically when Slot 4 is Used) 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	5 x RJ45 MGMT Port for Dedicated IPMI Access Only LAN1 Port for 1GbE Shares with IPMI Access LAN2 Port for 2.5GbE LAN3 and 4 Ports for 10GbE		5 x RJ45 MGMT Port for Dedicated IPMI Access Only LAN1 Port for 1GbE Shares with IPMI Access LAN2 Port for 2.5GbE LAN3 and 4 Ports for 10GbE		5 x RJ45 MGMT Port for Dedicated IPMI Access Only LAN1 Port for 1GbE Shares with IPMI Access LAN2 Port for 2.5GbE LAN3 and 4 Ports for 10GbE		5 x RJ45 MGMT Port for Dedicated IPMI Access Only LAN1 Port for 1GbE Shares with IPMI Access LAN2 Port for 2.5GbE LAN3 and 4 ports for 10GbE		4 x RJ45 (LAN1 Shares IPMI Port)		4 x RJ45 (LAN1 Shares IPMI Port)		7 x RJ45 (LAN1 Shares IPMI Port)		4 x RJ45 (LAN1 Shares IPMI Port)
USB	Front: 2 x USB 3.2 Gen1 Ports Rear: 6 x USB 3.2 Gen1 Ports		Front: 2 x USB 3.2 Gen1 Ports Rear: 4 x USB 3.2 Gen1 Ports + 2 x USB 2.0 Type A Ports		Front: 2 x USB 3.2 Gen1 Ports Rear: 6 x USB 3.2 Gen1 Ports		Front: 2 x USB 3.2 Gen1 Ports Rear: 4 x USB 3.2 Gen1 Ports + 2 x USB 2.0 Type A Ports		Front: 2 x USB 3.2 Gen1 Ports Rear: 4 x USB 3.2 Gen1 Ports		Front: 2 x USB 3.2 Gen1 Ports Rear: 4 x USB 3.2 Gen1 Ports		Front: 2 x USB 3.2 Gen1 Ports Rear: 2 x USB 3.2 Gen2 Ports		Front: 2 x USB 2.0 Type A Ports Rear: 4 x USB 3.2 Gen1 Ports
Display	AST 2600 BMC Controller		AST 2600 BMC Controller		AST 2600 BMC Controller		AST 2600 BMC Controller		AST 2500 BMC Controller		AST 2500 BMC Controller		Intel® 8/ 9th Generation CPU Integrated AST 2500 BMC Controller		AST 2500 BMC Controller
Display Resolution	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		3 x DP++ Ports, 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
Cooling Fan	1 x 120 x 25mm Front Fan 2 x 80 x 25mm Rear Fans		1 x 120 x 25mm Front Fan 2 x 80 x 25mm Rear Fans		1 x 120 x 25mm Front Fan 2 x 80 x 25mm Rear Fans		1 x 120 x 25mm Front Fan 2 x 80 x 25mm Rear Fans		1 x 120 x 25mm Front Fan 2 x 80 x 25mm Rear Fans		1 x 120 x 25mm Front Fan 2 x 80 x 25mm Rear Fans		2 x 80 x 25 mm Rear Fans		4 x 80 x 25 mm Middle Fans
Power Supply	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		1 x 500W PS2 ATX PSU		1 x 1U 80plus Gold 500W PSU
Operating Temp.	0 ~ 35°C (32 ~ 95°F)		0°C ~ 35°C (32°C ~ 95°F)		0°C ~ 35°C (32°F ~ 95°F)		0°C ~ 35°C (32°F ~ 95°F)		0 ~ 40°C (32 ~ 104°F)		0°C ~ 40°C (32°F ~ 104°F)		0 ~ 45°C (32 ~ 113°F)		0 ~ 40°C (32 ~ 104°F)
Dimension (W x H x D)	482.6 x 174.8 x 650 mm with Ear Mount	340 x 488 x 650 mm with External Handles & Pedestal Stand	482.6 x 174.8 x 528 mm with Ear Mount	340 x 488 x 528 mm with External Handles & Pedestal Stand	482.6 x 174.8 x 650 mm with Ear Mount	340 x 488 x 650 mm with External Handles & Pedestal Stand	482.6 x 174.8 x 528 mm with Ear Mount	340 x 488 x 528 mm with External Handles & Pedestal Stand	482.6 x 174.8 x 528 mm with Ear Mount	340 x 488 x 528 mm with External Handles & Pedestal Stand	482.6 x 174.8 x 528 mm with Ear Mount	340 x 488 x 528 mm with External Handles & Pedestal Stand	482.6 x 174.8 x 528 mm with Ear Mount	340 x 488 x 528 mm with External Handles & Pedestal Stand	483 x 88 x 650 mm
Form Factor	19" 4U Rackmount	Tower Chassis	19" 4U Rackmount	Tower Chassis	19" 4U Rackmount	Tower Chassis	19" 4U Rackmount	Tower Chassis	19" 4U Rackmount	Tower Chassis	19" 4U Rackmount	Tower Chassis	19" 4U Rackmount	Tower Chassis	19" 2U Rackmount
OS	Windows 10 IoT Enterprise LTSC 2021, Windows 11 Windows Server 2019, Windows Server 2022 Ubuntu 21.1, 22.04 LTS or Later Red Hat Enterprise Linux (RHEL) 8.2 and Later								Windows 10 IoT Enterprise Windows Server 2016 Windows Server 2019						



Panel PC / Monitor / Mobile

General Purpose Panel PC



Model Number	SID-10WR2	SID-21WR2	SID-10WR1	SID-15WR1	SID-21WR1	SID-10W04	SID-15W04	SID-21W04
LCD Size	10.1"	21.5"	10.1"	15.6"	21.5"	10.1"	15.6"	21.5"
Display Type	WXGA	Full HD	WXGA	Full HD	Full HD	WXGA	Full HD	Full HD
Resolution	1280 x 800	1920 x 1080	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	0.24795 x 0.24795 mm	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	250 cd/m ²	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	3000	800	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)	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	30 ms	30 ms	30ms	30ms	30 ms	30 ms	30 ms
Backlight	LED	LED	LED	LED	LED	LED	LED	LED
Touch Type	PCAP	PCAP	PCAP	PCAP	PCAP	PCAP	PCAP	PCAP
Touch Light Transmission	86%	86%	86%	85%	86%	86%	85%	86%
SBC	ACP-RK3568	ACP-RK3568	ACP-RK3288	ACP-RK3288	ACP-RK3288	ACP-APL	ACP-APL	ACP-APL
Processor	Rockchip RK3568 2.0GHz		Rockchip RK3288 1.6GHz			Intel Celeron J3455 1.5GHz		
I/O Chipset	Rockchip SoC Integrated		Rockchip SoC Integrated			Intel Celeron Integrated		
Memory	2GB DDR4		2GB DDR3L			1 x 204 pin SO-DIMM DDR3L		
Storage	32GB eMMC on Board		16GB eMMC on Board			32GB (eMMC) / M.2 3042 SSD		
Graphics	ARM Mali-G52 GPU Core		ARM Mali-T764 GPU Core			Intel® HD Graphics 500		
HDMI Resolution	HDMI up to 1080p @ 120Hz		HDMI up to 1080p @ 120Hz			HDMI up to 1080p @ 60Hz		
USB Port	2 x USB 3.0 Type A		2 x USB 2.0 Type A			2 x USB 3.0 Type A		
Serial Port	1 x RS-232 DB9		1 x RS-232 DB9			1 x RS-232/485 DB9		
Audio Interface	1 x Headphone Jack		1 x Headphone Jack			1 x Headphone Jack		
Ethernet	10/100/1000 RJ45 LAN		10/100/1000 RJ45 LAN			10/100/1000 RJ45 LAN		
Wi-Fi	Wi-Fi 802.11 b/g/n		Wi-Fi 802.11 b/g/n			802.11 a/b/g/n/ac Wireless LAN		
Bluetooth	1 x BT 4.0		1 x BT 4.0			1 x BT 5.0		
Power Connector	1 x DC Jack	1 x DC Jack	1 x DC Jack	1 x DC Jack	1 x DC Jack	1 x DC Jack		
Power Type	AT/ ATX (AT is Default Setting)		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 ~ 240Vac/ 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			Metal, Black		
Mounting	VESA 75 x 75	VESA 100 x 100	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	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	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	7.2 kg	1.36 kg	3.59 kg	7.2 kg	1.36 kg	3.59 kg	7.2 kg
IP Rating	Front IP65		Front IP65			Front IP65		
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)		
Operating Humidity	5% ~ 90% Relative Humidity, Non-condensing		5% ~ 90% Relative Humidity, Non-condensing			5% ~ 90% Relative Humidity, Non-condensing		
Certification	CE, FCC Class B		CE, FCC Class B			CE, FCC Class B		
OS Information	Android 11		Linux Debian 9, Android 8.1			Windows 10 IoT, Linux Ubuntu 20.04		

Wide Voltage

Low Power Consumption

P-Cap Touch

Slim Design

Fanless

HDMI

IP65

WiFi

Benefits of Consumer Products

- Stylish Design - Affordable Price

Ultra Slim

Cost Effective

High Quality

Advantage of Industrial Products

- Durability - Longevity Support

Front IP65

Shock & Vibration Resistive

Customization Ability



Panel PC / Monitor / Mobile

General Purpose 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	0.17925 mm (H) x 0.17925 mm (V)	0.248mm (H) x 0.248mm (V)	0.248mm (H) x 0.248mm (V)	274.5 um (H) x 274.5 um (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	16 ms
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 (ILITEK)	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™ 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/ 4GB LPDDR4	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16GB	2 x 260-pin DDR4 3200MHz SO-DIMM up to 64GB	2 x 260-pin DDR4 2400MHz SO-DIMM Supports up to 32GB
Expansion	1 x M.2 3042 B-Key for LTE or SSD	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 1 x mPCIe with SATA or PCIE x1 mSATA
Storage	32GB eMMC 1 x M.2 3042 B-Key	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 Realtek RTL8211F Gigabit	1 x Intel® I211AT; 1 x Intel® I219LM	1 x Intel® I219LM; 1 x Intel® I225IT	1 x Intel® I211AT; 1 x Intel® I219LM
Power Connector	DC Jack +12 ~ 24V DC in/ Powered LAN	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 45.2 mm	592 x 382 x 49.5 mm
Weight	2.2 kg	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	Windows 7, Windows 8.1, Windows 10 IoT, Linux	Windows 10 IoT, Linux	Windows 10 IoT, Linux

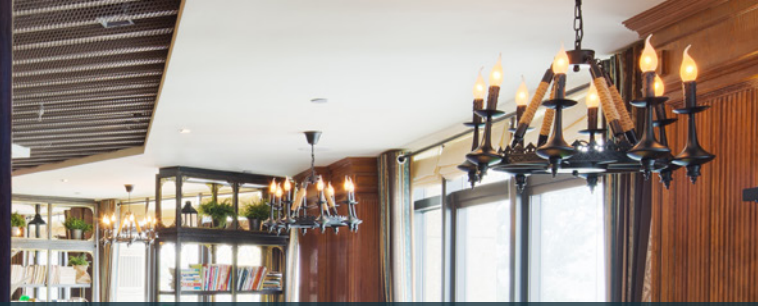


Model Number	FPC-08W29	FPC-10W09	FPC-1736
LCD Size	8"	10.1"	17"
Display Type	WSVGA	WSVGA	SWGA
Resolution	1024 x 600	1024 x 600	1280 x 1024
Pixel Pitch	0.1725 mm (W) x 0.1656 mm (H)	0.2175 mm (W) x 0.2088 mm (H)	0.264 x 0.264
Luminance	500 cd/m ²	350 cd/m ²	250 cd/m ²
Contrast Ratio	700	500	1000
Viewing 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	16 ms	5 ms
Backlight	LED	LED	LED
Touch Type	5-Wire Resistive	5-Wire Resistive	PCAP Multi-touch up to 10 Points (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	8th/ 9th Generation Intel® Core™ i3/i5/i7 Processors (LGA1151 Socket, 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	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8GB	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB	2 x 260-pin DDR4 2133/2400/2666MHz SO-DIMM Socket, up to 64GB Max
Expansion	1 x Mini PCIe Supports mSATA	1 x Mini PCIe Supports mSATA	1 x PCIe x4 Slot (Option for 2 x PCI Slot) 1 x M.2 E-key Slot, Type-2230 with PCIe
Storage	1 x CompactFlash Type I/II Socket (CF-SATA Optional)	2.5" SSD/ HDD or Type I/II CF Card	1 x M.2 M-key 2242 with SATA
I/O	3 x USB 2.0, 1 x USB 3.0 1 x RS-232/422/485, 1 x RS-232	4 x USB 2.0, 1 x USB 3.0 1 x RS-232/422/485	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 2560 x 1080 @ 60Hz HDMI: Max. Resolution 1920 x 1200 @ 60Hz	VGA: Max. Resolution 2560 x 1080 @ 60Hz HDMI: Max. Resolution 1920 x 1200 @ 60Hz	VGA: Max. Resolution 2560 x 1080 @ 60Hz HDMI: Max. Resolution 1920 x 1200 @ 60Hz
Audio	Realtek ALC888S Support 5.1-CH	Realtek ALC888S Support 5.1-CH	Realtek ALC888S 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	Windows 7, Windows 8.1, Linux, Windows 10 IoT	Windows 7, Windows 8.1, Linux, Windows 10 IoT	Windows 10 IoT, Linux



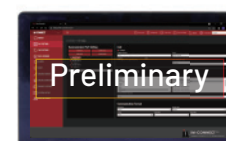
Panel PC / Monitor / Mobile

General Purpose Panel PC



Panel PC / Monitor / Mobile

Industrial Oriented



Model Number	VNS-10WR2
LCD Size	10.1"
Display Type	WXGA
Resolution	1280 x 800
Pixel Pitch	0.1695 (H) x 0.1695 (V) mm
Luminance	350 cd/m ²
Contrast Ratio	800
Viewing Angle	85 (U), 85 (D), 85 (L), 85 (R)
Response Time	30 ms
Backlight	LED
Touch Type	PCAP
Touch Light Transmission	86%
Touch Controller	USB Interface
SBC	ACP-RK3568A
Processor	Rockchip RK3568
System Memory	2GB/ 4GB LPDDR4
Storage	32GB eMMC 1 x M.2 3042 B-Key
USB	2 x USB 3.0 Type A
COM Port	1 x RS-232/485 (RJ45 Type)
Other	Touch Button for Power/ Brightness/ Volume 1 x 3.5mm Audio Jack, NFC, Cam 2.0 MP LED Indicating Bar
Display Chipset	Rockchip
Display Resolution	1280 x 800
Audio	Everest ES8388
Audio Interface	1 x Line-out, 1 x Mic-in, 2 x Speaker
Ethernet	1 x Realtek RTL8211F Gigabit
Power Connector	DC Jack +12 ~ 24V DC in / Powered LAN
Power Type	AT
Adapter	N/A
Construction	White Plastic w/ Antibacterial
Dimension	270 x 193 x 28 mm
Weight	1.1 kg
Certification	CE, FCC Class B
OS Information	Android 11, Debian 11

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	PCAP	PCAP
Touch Light Transmission	75%	86%
Processor	Rockchip RK3568 Quad-Core ARM Cortex-A55, up to 2.0GHz	
I/O Chipset	Rockchip SoC Integrated	
Memory	2GB LPDDR4	
Storage	32GB eMMC on Board	
HDMI Resolution	HDMI Up to 1080p @ 30Hz	
USB Port	2 x USB 3.0 (Type A)	
Audio	1 x Headphone Jack, 2 x Speaker	
Other	1 x Camera, 1 x Microphone	
Ethernet	1 x 10/100/1000 RJ45 LAN	
Wi-Fi	802.11 a/b/g/n/ac Built-in	
Bluetooth	Bluetooth 5.0 Built-in	
Power Connector	DC Jack, DC 12 ~ 24V	
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	580 g	800 g
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	RPC-15WNX
Resolution	1024 x 800	1920 x 1080
Pixel Pitch	0.117 (H) x 0.117 (V)	TBD
Luminance	400 cd/m ²	1500 cd/m ²
Touch Type	Projective Capacitive	N/A
Touch Light Transmission	85 %	N/A
Touch Controller	USB Touch (SIS)	N/A
Processor	NXP i.MX6 Quad	NXP i.MX6 Cortex-A9 Quad 1GHz
System Memory	1GB LPDDR3	2GB LPDDR3
Storage	1 x On Board 4GB eMMC	8G eMMC
External I/O Connector	1 x Audio amplifier 1 x HDMI 2.0 Out 1 x Mic-in 1 x Micro SD Slot 1 x RS-232/422/485 Debug 2 x USB 2.0 Type A	1 x LAN 1 x RS485 1 x USB
Power Requirement	12 ~ 26V DC Input, 2.5mm DC Jack Typical 19V Input With Brownout Detection or Powered LAN (Optional)	24V DC IN 60W by EN50155 PSU
Operating Temperature	-20°C ~ 55°C (-4°F ~ 131°F)	-25°C ~ 70°C (-13°F ~ 158°F)
Storage Temperature	-30°C ~ 70°C (-22°F ~ 158°F)	-40°C ~ 85°C (-40°F ~ 185°F)
Dimension (L x W x H)	184.3 x 124.3 x 30.5 mm	503.6 x 295 x 26.8 mm
Weight	1.5 kg	4.24 kg
Certification	CE, FCC Class B	CE, FCC Class B
OS Information	Android 6.0	Linux (Ubuntu 14.04 LTS or Later)



OTC Modular Panel PC

* Dimension can be adjusted by customer request

A Main Screen

Selection For x86 Panel PC:

- Apollo Lake J3455/ Core I CPU

Selection For ARM Based Panel PC:

- Open Frame with Rockchip RK3288

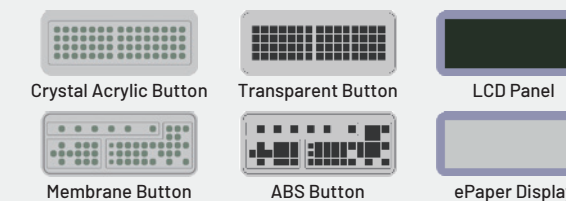
Selection For Touch Monitor:

- Open Frame Monitor (OFM)

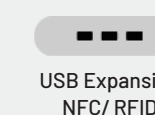
- Industrial Rugged Monitor (ARC)



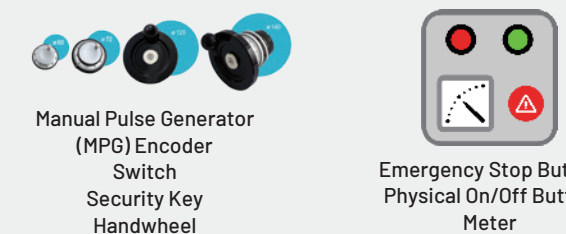
B D Keyboard/ LCD/ E Ink/ Button



C Expansion Ports/ NFC/ RFID



E Physical Button/ MPG Encoder



Stainless Steel Panel PC



Super Scratch-proof Panel

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



Sunlight Readable

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



Stainless:

Vandal-proof; Oil-proof

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



Full IP65/ IP69K

Design for Water-proof

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



Wide Volt./

Over Current Protection

- Flexibility
- Safety
- Over Current/ Surge Protection



Model Number	SPC-15W42	SPC-2142	SPC-10W35	SPC-1533-B1	SPC-2133-B1	SPC-15W37
LCD Size	15.6", 16:9	21.5", 16:9	10.1", 16:10	15", 4:3	21.5", 16:9	15.6", 16:9
Display Type, Resolution	Full HD, 1920 x 1080	Full HD, 1920 x 1080	WXGA, 1280 x 800	XGA, 1024 x 768	Full HD, 1920 x 1080	Full HD, 1920 x 1080
Pixel Pitch	179.25um (H) x 179.25um (V)	0.248 x 0.248 mm	0.1695mm (H) x 0.1695mm (V)	0.297 x 0.297 mm	0.248 x 0.248 mm	179.25 um (H) x 179.25 um (V)
Luminance	450 cd/m ²	250 cd/m ²	350 cd/m ²	300 cd/m ²	250 cd/m ²	450 cd/m ²
Contrast Ratio	800	3000	800	2000	3000	800
Viewing Angle	89(U), 89(D), 89(L), 89(R)	89(U), 89(D), 89(L), 89(R)	85(U), 85(D), 85(L), 85(R)	88(U), 88(D), 88(L), 88(R)	89(U), 89(D), 89(L), 89(R)	89(U), 89(D), 89(L), 89(R)
Response Time	13 ms	18 ms	25 ms	16 ms	18 ms	30 ms
Backlight	LED	LED	LED	LED	LED	LED
Touch Type	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points
Touch Light Transmission	89%	89%	88 %	89%	89%	89%
Touch Controller	USB (EETI)	USB (EETI)	EETI	USB (EETI)	USB (EETI)	USB (EETI)
SBC	EMX-RPLP	EMX-RPLP	ECM-EHL3	EMX-APLP	EMX-APLP	EMX-ASLP
Processor	13th Generation Intel® Core™ i3/i5/i7 Processors (LGA1700 Socket)		Onboard Intel® Elkhart Lake Processor	Onboard Intel® Apollo Lake Processor		Onboard Intel® Alder Lake-N Processor
I/O Chipset	IT5782VG		IT5571E	ITE IT8528		IT5782VG
System Memory	1 x 262-pin DDR5 4800MHz SO-DIMM		1 x 204-Pin DDR4 3200MHz SO-DIMM Supports up to 32GB (Non-ECC)	2 x 204-pin DDR3L 1600MTs up to 16GB		1 x 262-pin DDR5 4800MHz SO-DIMM Socket Supports up to 16GB Max (Non ECC Only)
Expansion	1 x M.2 Key-B 2242/3042/3052 with SIM Card Slot Support SATA3/ PCIe & USB for LTE (4/5G) NVMe 1 x M.2 (Key-E, 2230, PCIe1, USB2.0)	1 x M.2 Type E 2230 Supports WiFi Module 1 x M.2 Type B 3042/2242 1 x M.2 Type M Supports 2260 Slot	1 x M.2 Type E 2230 Supports WiFi Module 1 x M.2 Type B 3042/2242 1 x M.2 Type M Supports 2260 Slot	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 M.2 (Key-B, 2242/3042/3052, SATAIII, PCIe1, USB 3.2 Gen1 x1(5Gbp/s)), USB2.0, SIM Slot for LTE Cards, 1 x M.2 (Key-E, 2230, PCIe1, USB 2.0)
Storage	1 x M.2 Support SATA, 1 x 2.5" SATA3 Drive Bay		1 x M.2 Support SATA, 1 x 2.5" SATA3 Drive Bay	1 x Full Size Mini PCI-e mSATA, 1 x 2.5" SATA3 Drive Bay		1 x M.2 Support SATA, 1 x 2.5" SATA3 Drive Bay
USB	2 x M12 Connector (USB2.0)		2 x M12 Connector (USB2.0)	2 x M12 Connector (USB2.0)		2 x M12 Connector (USB 2.0)
COM Port	1 x M12 Connector (RS232/422/485 by Jumper & BIOS Selection)		1 x M12 Connector (RS232/422/485 by Jumper & BIOS Selection)	1 x M12 Connector (RS232/422/485 by Jumper & BIOS Selection)		1 x M12 Connector (RS-232/422/485 by Jumper & BIOS Selection)
Display Chipset	Intel® Iris® Xe Graphics (for Core i5 & i7) Intel® UHD Graphics for 12th Gen Intel® Processors (For Core i3 & Celeron)		Intel® SoC Integrated Graphics	Intel® SoC integrated Graphics		Intel® UHD Graphics
Audio	Realtek ALC 888S/897		Realtek ALC 888S	Realtek ALC 888S/897		Realtek ALC 888S/ 897
Ethernet	1 x M12 Connector (2 x Intel® I226LM 2.5 Gigabit Ethernet)		1 x M2 Connector (2 x Intel® I210AT PCIe Gigabit Ethernet)	1 x M2 Connector (1 x Intel® I211AT PCIe Gigabit Ethernet)		1 x M2 Connector (2 x Intel® I226LM 2.5 Gigabit Ethernet)
Power Connector	1 x M12 DC Jack, +12V ~ 24V		1 x M12 DC Jack, +12V ~ 24V	1 x M12 DC Jack, +12V ~ 26V (Option for Phoenix Connector)		1 x M12 DC Jack, +12 ~ 24V
Power Type	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 ~ 240Vac/ 50 ~ 60Hz Output: 72W Adapter (19V @ 3.78A Adapter)		Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (24V @ 2.5A Adapter)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)		Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 72W Adapter (19V @ 3.78A Adapter)
Construction (Front, Rear)	Stainless Steel		Stainless Steel	Stainless Steel		Stainless Steel
Operating 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)		-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)	-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	CE, FCC Class A		CE, FCC Class A
OS Information	Windows 10 IoT, Windows 11 IoT, Linux		Windows 10 IoT, Windows 11 IoT, Linux	Windows 10 IoT, Linux, Android x86 8.1		Windows 10 IoT, Windows 11 IoT, Linux
IP Rating	Full IP66, IP69K		Full IP66, IP69K	Full IP66, IP69K		Full IP66, IP69K
Dimension	TBD	562 x 365.8 x 49 mm	296 x 214 x 49 mm	393 x 315.8 x 49 mm	562 x 365.8 x 49 mm	TBD
Weight	5.7 kg	9.4 kg	3 kg	5.7 kg	9.4 kg	5.7 kg



Panel PC / Monitor / Mobile

Rugged Panel PC



Model Number	ARC-1242	ARC-1542	ARC-21W42
LCD Size	12.1", 4:3	15", 4:3	21.5", 16:9
Display Type	XGA	XGA	Full HD
Resolution	1024 x 768	1024 x 768	1920 x 1080
Pixel Pitch	0.240 mm(H)x 0.240 mm(V)	0.297mm(H)x 0.297mm(V)	247.95 um(H)x 247.95 um(V)
Luminance	600 cd/m ²	500 cd/m ²	500 cd/m ²
Contrast Ratio	1000	2500	1000
Viewing Angle	89 (U), 89 (D), 89 (L), 89 (R)	88 (U), 88 (D), 88 (L), 88 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	13 ms	16 ms	14 ms
Backlight	LED	LED	LED
Touch Type	A Model: 5 Wires Resistive Touch/ B Model: PCAP Multi-touch up to 10 Points		PCAP Multi-touch up to 10 Points
Touch Light Transmission	80% (Resistive)/ 89% (PCAP)		89 %
Touch Controller	Onboard USB Touch (PenMount) for Resistive; USB Touch (EETI) for PCAP		USB Touch (EETI)
SBC	ARC-RPLPS		
Processor	13th Generation Intel® Core™ i3/i5/i7 Processors (LGA1700 Socket)		
I/O Chipset	IT5782VG		
System Memory	1 x 262-pin DDR5 4800MHz SO-DIMM up to 32GB		
Expansion	1 x M.2 Key-B 2242/3042/3052/2280 with SIM Card Slot Support SATA3/ PCIe & USB for LTE (4/5G) NVMe 1 x M.2 (Key-E, 2230, PCIe1), USB2.0), 1 x 80-pin IET Interface		
Storage	1 x M.2 Support SATA, 1 x 2.5" SATA3 Drive Bay		
USB	4 x USB 3.2, 1 x USB Type C (with PD, Display, USB Function)		
COM Port	1 x RS-232/422/485, 1 x RS-232		
Other	7 x Knockouts for Antenna Mounting (5 from Rear Cover + 2 from IET Bracket)		
Display Chipset	Intel® Iris® Xe Graphics (for Core i5 & i7) Intel® UHD Graphics for 12th Gen Intel® Processors (for Core i3 & Celeron)		
Audio	Realtek ALC 888S/897		
Audio Interface	2 x 2W Speaker Output Line-in, Line-out, Mic-in by Expandable IET (Option)		
Ethernet	2 x Intel® I226LM 2.5 GbE		
Power Connector	Lockable DC Jack (Phoenix Connector by Option), +12V ~ 24V		
Power Type	AT/ ATX (ATX is Default Setting)		
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 72W Adapter (19V @ 3.78A Adapter)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 120W Adapter (24V @ 5A Adapter)	
Construction (Front, Rear)	Silver Aluminum (Resistive), Die Casting with Cover Lens (P-cap) Black Die Casting		Die Casting with Cover Lens (P-cap) Black Die Casting
Operating Temperature	-20°C ~ 60°C (-4°F ~ 140°F)		-10°C ~ 50°C (14°F ~ 122°F)
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)		-20°C ~ 60°C (-4°F ~ 140°F)
Certification	CE, FCC Class B		
OS Information	Windows 10 IoT, Windows 11 IoT, Linux		Windows 10 IoT, Windows 11 IoT, Linux
Dimension	A Model: 283 x 221 x 51.2 mm B Model: 284 x 223 x 46 mm	A Model: 350 x 274 x 54.5 mm B Model: 350.51 x 274.51 x 56.5 mm	538.05 x 341.05 x 60.05mm
Weight	2.4 kg	3.7 kg	7.3 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	1024 x 768	1280 x 800
Pixel Pitch	0.240 x 0.240 mm	0.297 x 0.297 mm	0.248 x 0.248	0.0685 mm(H)x 0.2055 mm(V)	0.1695 mm x 0.1695 mm
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	89 (U), 89 (D), 89 (L), 89 (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	13 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: PCAP Multi-touch up to 10 Points (Full Flat Design)		PCAP Multi-touch up to 10 Points	5-Wire Resistive Touch	PCAP Multi-touch up to 10 Points
Touch Light Transmission	A Model: 80%, B Model: 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 SATA 3/ PCIe x1/ USB 3.1			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 SATA 3/ PCIe x1/ USB 3.1 or 1 x 2.5" Drive Bay (7mm HDD Restricted)			1 x M.2 Key-B 2242/3042/3052 for SATA3/ PCIe x1/ USB 3.1 or 1 x 2.5" Drive Bay (7mm HDD Restricted)	
USB	4 x USB 3.1 Gen.2			2 x USB 3.1 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	
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 ALC888S/ 897			Realtek ALC888S/ 897	
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, +12V ~ 24V			Lockable DC Jack, +12V ~ 24V	
Power Type	AT/ ATX (ATX is Default Setting)			AT/ ATX (ATX is Default Setting)	
Adapter	Input: 100 ~ 240 Vac/ 50 ~ 60 Hz Output: 72W Adapter (19V @ 3.78A)		Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 120W Adapter (24V @ 5A)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 72W Adapter (19V @ 3.78A)	
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 IoT, Windows 11 IoT, Linux			Windows 10 IoT, Windows 11 IoT, Linux	
Dimension	A Model: 283 x 221.1 x 51.2 mm B Model: 192.86 x 225.4 x 51.5 mm	A Model: 350 x 274 x 54.5 mm B Model: 350.51 x 274.51 x 56.5 mm	538.05 x 341.05 x 64 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 Panel PC



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	0.0685 mm (H) x 0.2055 mm (V)	0.297 mm (H) x 0.297 mm (V)	0.1695 mm x 0.1695 mm	0.252 mm (H) x 0.252 mm (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	5-Wire Resistive Touch		PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points
Touch Light Transmission	80%		88%	88%	89%
Touch Controller	Onboard USB Touch (PenMount)		USB Touch (EETI)	USB Touch (EETI)	USB Touch (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	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB		1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8GB		
Expansion	1 x Mini PCIe Supports mSATA, 1 x Optional 80-pin Expansion		1 x Mini PCIe Supports mSATA, 1 x Optional 80-pin Expansion		
Storage	1 x 2.5" Drive Bay (7mm HDD Restricted)		1 x 2.5" Drive Bay (7mm HDD Restricted)		
USB	4 x USB 3.0		4 x USB 3.0		
COM Port	1 x RS-232/422/485 (Factory Optional), 1 x RS-232		1 x RS-232/422/485, 1 x RS-232		
Other	1 x WiFi (Option), 3 x Knockouts for Antenna Mounting		1 x WiFi (Option), 3 x Knockouts for Antenna Mounting		
Display Chipset	Intel® 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 ALC888S		Realtek ALC888S		
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	Windows 10 IoT, Linux		Windows 10 IoT, 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



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 , 500 cd/m ²	250 cd/m ²	250 cd/m ²
Contrast Ratio	1000	2000	3000	1000
Viewing Angle	89 (U), 89 (D), 89 (L), 89 (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	13 ms	16 ms	20 ms	5 ms
Backlight	LED	LED	LED	LED
Touch Type	A Model: 5-Wire Resistive Touch B Model: PCAP Multi-touch up to 10 Points (Full Flat Design)		PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points (Full Flat Design)
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: 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™ 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/ USB 3.0/ USB 2.0, 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 1 x PCIe x1/ SATA/ USB 3.0/ USB 2.0 or 1 x 2.5" Drive Bay
USB	4 x USB 3.1 Gen.2			3 x USB 3.1 Gen.2, 1 x USB 3.1 Gen.1, 3 x USB 2.0 (Optional) *1 x USB 2.0 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 RS-232/422/485 (Default); COM2: 1 x RS-232/422/485 (Optional); COM3: 1 x RS-232 (Optional) COM4 ~ 6: 3 x RS-232/ GPIO/ USB 2.0 (Optional)
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 @ 60Hz
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 ~ 24V			Mini-DIN 4pin DC-in, +12V ~ 24V DC-in
Power Type	AT/ ATX (ATX is Default Setting)			AT/ ATX (ATX is Default Setting)
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 72W Adapter (19V @ 3.78A)		Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 120W Adapter (24V @ 5A)	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 IoT, Windows 11 IoT, Linux			Windows 10 IoT, Windows 11 IoT, Linux
Dimension	A Model: 283 x 221 x 51.2 mm B Model: 284 x 223 x 46 mm	A Model: 350 x 274 x 54.5 mm B Model: 350.51 x 274.51 x 56.5 mm	538.05 x 341.05 x 64 mm	393 x 325 x 72 mm
Weight	2.4 kg	3.7 kg	7.3 kg	4.4 kg

Panel PC / Monitor / Mobile

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 cd/m ²	350/ 1000 cd/m ²	220 cd/m ²	250 cd/m ²
Viewing Angle	80 (U), 80 (D), 80 (L), 80 (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)
Touch Type	PCAP	PCAP	PCAP	PCAP
Processor	Rockchip RK3288	Rockchip RK3288	Rockchip RK3288	Rockchip RK3288
System Memory	2GB DDR3L	2GB DDR3L	2GB DDR3L	2GB DDR3L
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 10/100/1000 RJ45 LAN 1x DC Jack 1x Headphone Jack 1x HDMI 2.0 Out 1x Reset 2x USB 3.0 Type A	1x 10/100/1000 RJ45 LAN 1x DC Jack 1x Headphone Jack 1x HDMI 2.0 Out 1x Reset 2x USB 3.0 Type A	1x 10/100/1000 RJ45 LAN 1x DC Jack 1x Headphone Jack 1x HDMI 2.0 Out 1x Reset 2x USB 3.0 Type A	1x 10/100/1000 RJ45 LAN 1x DC Jack 1x Headphone Jack 1x HDMI 2.0 Out 1x Reset 2x USB 3.0 Type A
Internal I/O Connector	1x A-MIC 1x DC Input 1x GPIO 1x I ² C 1x I ² C Sensor Interface 1x LVDS 1x M.2 3042 B-Key 1x Micro SD Slot 1x Micro USB 1x MIPI DSI 1x Power Button 1x RS-232 1x RS-485 1x RS-232/422/485 Debug 1x RTC Battery 1x Speaker 1x SPI 1x Touch Button 1x USB Touch Interface	1x A-MIC 1x DC Input 1x GPIO 1x I ² C 1x I ² C Sensor Interface 1x LVDS 1x M.2 3042 B-Key 1x Micro SD slot 1x Micro USB 1x MIPI DSI 1x Power Button 1x RS-232 1x RS-485 1x RS-232/422/485 Debug 1x RTC Battery 1x Speaker 1x SPI 1x Touch Button 1x USB Touch Interface	1x A-MIC 1x DC Input 1x eDP 1x GPIO 1x I ² C Sensor Interface 1x LVDS 1x M.2 3042 B-Key 1x Micro SD Slot 1x Micro USB 1x MIPI DSI 1x Power Button 1x RS-232 1x RS-485 1x RS-232/422/485 Debug 1x RTC Battery 1x Speaker 1x SPI 1x Touch Button 1x USB Touch Interface	1x A-MIC 1x DC Input 1x GPIO 1x I ² C Sensor Interface 1x LVDS 1x M.2 3042 B-Key 1x Micro SD slot 1x Micro USB 1x MIPI DSI 1x Power Button 1x RS-232 1x RS-485 1x RS-232/422/485 Debug 1x RTC Battery 1x Speaker 1x SPI 1x Touch Button 1x USB Touch Interface
Power Requirement	DC 12V ~ 24V	DC 12V ~ 24V	DC 12V ~ 24V	DC 12V ~ 24V
Power Type	AT	AT	AT	AT
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)	-20°C ~ 60°C (-4°F ~ 140°F)	-20°C ~ 60°C (-4°F ~ 140°F)
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
OS Information	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	OFT-10W04	OFT-15W04	OFT-21W04
LCD Size	7"	10.1"	21.5"	10.1"	15.6"	21.5"
Resolution	600 x 1024	800 x 1280	1920 x 1080	800 x 1280	1920 x 1080	1920 x 1080
Luminance	350 cd/m ²	350 cd/m ²	250 cd/m ²	350 cd/m ²	220 cd/m ²	250 cd/m ²
Viewing Angle	85 (U), 85 (D), 85 (L), 85 (R)	80 (U), 80 (D), 80 (L), 80 (R)	89 (U), 89 (D), 89 (L), 89 (R)	85 (U), 85 (D), 85 (L), 85 (R)	85 (U), 85 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Touch Type	PCAP	PCAP	PCAP	PCAP	PCAP	PCAP
Processor	Rockchip RK3568	Rockchip RK3568	Rockchip RK3568	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	2GB DDR4	2GB DDR4	2GB DDR4	4GB DDR3L RAM 1x 204 pin SO-DIMM	4GB DDR3L RAM 1x 204 pin SO-DIMM	4GB DDR3L RAM 1x 204 pin SO-DIMM
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	802.11 a/b/g/n/ac (2230)	802.11a/b/g/n/ac (2230)	802.11 a/b/g/n/ac (2230)
Storage	32G eMMC	32G eMMC	32G eMMC	32GB (eMMC) / M.2 3042 SSD	32GB (eMMC) / M.2 3042 SSD	32GB (eMMC) / M.2 3042 SSD
External I/O Connector	1x 10/100/1000 RJ45 Powered LAN 1x DC Jack 1x Headphone Jack 1x HDMI 1.4 Out 1x Reset 2x USB 3.0 Type A	1x 10/100/1000 RJ45 Powered LAN 1x DC Jack 1x Headphone Jack 1x HDMI 1.4 Out 1x Reset 2x USB 3.0 Type A	1x 10/100/1000 RJ45 Powered LAN 1x DC Jack 1x Headphone Jack 1x HDMI 1.4 Out 1x Reset 2x USB 3.0 Type A	1x 10/100/1000 RJ45 Powered LAN 1x DC Jack 1x Headphone Jack 1x HDMI 1.4 Out 1x Reset 2x USB 3.0 Type A	1x 10/100/1000 RJ45 Powered LAN 1x DC Jack 1x Headphone Jack 1x HDMI 1.4 Out 1x Reset 2x USB 3.0 Type A	1x 10/100/1000 RJ45 Powered LAN 1x DC Jack 1x Headphone Jack 1x HDMI 1.4 Out 1x Reset 2x USB 3.0 Type A
Internal I/O Connector	1x A-MIC 1x DC Input 1x GPIO 1x I ² C Sensor Interface 1x M.2 3042 B-Key 1x Mic-in 1x MIPI DSI 2x RS-232 1x RS-485 1x RTC Battery 1x Speaker 1x Touch Button 1x USB CAM_DMIC Interface 1x USB Touch Interface	1x A-MIC 1x DC Input 1x GPIO 1x I ² C Sensor Interface 1x M.2 3042 B-Key 1x Mic-in 1x MIPI DSI 2x RS-232 1x RS-485 1x RTC Battery 1x Speaker 1x Touch Button 1x USB CAM_DMIC Interface 1x USB Touch Interface	1x A-MIC 1x DC Input 1x GPIO 1x I ² C Sensor Interface 1x M.2 3042 B-Key 1x Mic-in 1x MIPI DSI 2x RS-232 1x RS-485 1x RTC Battery 1x Speaker 1x Touch Button 1x USB CAM_DMIC Interface 1x USB Touch Interface	1x A-MIC 1x DC Input 1x GPIO 1x M.2 3042 B-Key 1x Micro USB 1x MIPI DSI 1x RS-232/422/485 Debug 1x SD Card Slot 1x Speaker 1x Touch Button	1x A-MIC 1x DC Input 1x GPIO 1x M.2 3042 B-Key 1x Micro USB 1x MIPI DSI 1x RS-232/422/485 Debug 1x SD Card Slot 1x Speaker 1x Touch Button	1x A-MIC 1x DC Input 1x GPIO 1x M.2 3042 B-Key 1x Micro USB 1x MIPI DSI 1x RS-232/422/485 Debug 1x SD Card Slot 1x Speaker 1x Touch Button
Power Requirement	DC 12V ~ 24V	DC 12V ~ 24V	DC 12V ~ 24V	DC 12V~24V	DC 12V~24V	DC 12V~24V
Power Type	AT	AT	AT	AT	AT	AT
Operating Temp.	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)
Storage Temp.	-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)	-20°C ~ 60°C (-4°F ~ 140°F)
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
OS Information	Android 11, Debian 11	Android 11, Debian 11	Android 11, Debian 11	Windows 10 IoT, Ubuntu	Windows 10 IoT, Ubuntu	Windows 10 IoT, Ubuntu
Dimension	190 x 130 x 31.8 mm	254 x 178 x 33.8 mm	515 x 322 x 44.9 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	3.6 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



Panel PC / Monitor / Mobile

Open Frame Panel PC



Model Number	OFP-07W33	OFP-15W33	OFP-21W33	OFT-07WR3	OFT-10WR3	OFT-15WR3	OFT-07WAD	OFT-10WAD	
LCD Size	7", 16:10	15.6", 16:9	21.5", 16:9	7"	10.1"	15"	7"	10.1"	
Resolution	1280 x 800	1920 x 1080	1920 x 1080	800 x 400	800 x 1280	1024 x 768	600 x 1024	800 X 1280	
Luminance	300 cd/m ²	220 cd/m ²	250 cd/m ²	500 cd/m ²	350 cd/m ²	500 cd/m ²	350 cd/m ²	350 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)	89 (U), 89 (D), 89 (L), 89 (R)	85 (U), 85 (D), 85 (L), 85 (R)	88 (U), 88 (D), 88 (L), 88 (R)	1750 (H), 1750 (V)	1750 (H), 1750 (V)	
Touch Type	PCAP Multi-touch up to 10 Points			PCAP Multi-touch up to 10 Points		PCAP Multi-touch up to 10 Points		PCAP Multi-touch up to 10 Points	
Processor	Onboard Intel® Celeron® N3350/J3455 SoC BGA Processor			Rockchip RK3568J Quad-core Cortex-A55 1.4/ 1.8GHz		Rockchip RK3568J Quad-core Cortex-A55 1.4/ 1.8GHz		Intel® IOTG Alder Lake-N Processor 6W N50	
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)	2GB/ 4GB LPDDR4	2GB/ 4GB LPDDR4	2GB/ 4GB LPDDR4	8GB/ 16GB LPDDR5	8GB/ 16GB LPDDR5	
Wireless	Option by Mini PCIe : 802.11 a/b/g/n/ac Wireless LAN and Bluetooth 4.0+			802.11 a/b/g/n/ac (2230)	802.11 a/b/g/n/ac (2230)	802.11 a/b/g/n/ac (2230)	Option by M.2: Follow WIFI Module Specification	Option by M.2: Follow WIFI Module Specification	
Storage	64GB mSATA by mPCIe Slot	64GB mSATA by mPCIe Slot (Option for SATA interface 2.5" HDD/ SSD)	64GB mSATA by mPCIe Slot (Option for SATA interface 2.5" HDD/ SSD)	32GB/ 64GB eMMC (Optional)	32GB/ 64GB eMMC (Optional)	32GB/ 64GB eMMC (Optional)	32GB/ 64GB/ 128GB eMMC (Optional)	32GB/ 64GB/ 128GB eMMC (Optional)	
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	2 x 10/100/1000 RJ45 LAN 1 x DC Jack 1 x HDMI 2.0 Out 1 x Reset 1 x RS-232/422/485 DB9 2 x USB 3.0 Type A	2 x 10/100/1000 RJ45 LAN 1 x DC Jack 1 x HDMI 2.0 Out 1 x Reset 1 x RS-232/422/485 DB9 2 x USB 3.0 Type A	2 x 10/100/1000 RJ45 LAN 1 x DC Jack 1 x HDMI 2.0 Out 1 x Reset 1 x RS-232/422/485 DB9 2 x USB 3.0 Type A	2 x 10/100/1000 RJ45 LAN 1 x Audio Jack TRS 1 x DC Jack 1 x HDMI 2.0 Out 1 x Reset 2 x USB 3.0 Type A	2 x 10/100/1000 RJ45 LAN 1 x Audio Jack TRS 1 x DC Jack 1 x HDMI 2.0 Out 1 x Reset 2 x USB 3.0 Type A	
Internal I/O Connector	1 x RS-232/422/485 2 x USB 2.0 1 x 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-PCIe 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-PCIe Support mSATA 1 x SIM Card Slot 1 x M.2 (2230) A-Key, Support WiFi Module	1 x Backlight 2 x CAN 1 x DC Input 1 x eDP, 1 x GPIO 1 x I ² C, 1 x LVDS 1 x M.2 2230 E-Key 1 x M.2 3042 B-Key 1 x MIPI DSI 2 x RS-232 1 x RS-485 1 x RTC Battery 1 x SIM Card Slot 1 x Speaker 1 x Touch Button 2 x USB 2.0	1 x Backlight 2 x CAN 1 x DC Input 1 x eDP, 1 x GPIO 1 x I ² C, 1 x LVDS 1 x M.2 2230 E-Key 1 x M.2 3042 B-Key 1 x MIPI DSI 2 x RS-232 1 x RS-485 1 x RTC Battery 1 x SIM Card Slot 1 x Speaker 1 x Touch Button 2 x USB 2.0	1 x Backlight 2 x CAN 1 x DC Input 1 x eDP, 1 x GPIO 1 x I ² C, 1 x LVDS 1 x M.2 2230 E-Key 1 x M.2 3042 B-Key 1 x MIPI DSI 2 x RS-232 1 x RS-485 1 x RTC Battery 1 x SIM Card Slot 1 x Speaker 1 x Touch Button 2 x USB 2.0	1 x A-MIC 2 x GPIO 1 x I ² C 1 x M.2 2230 E-Key 1 x Micro SD slot 1 x MIPI DSI 1 x RS-232 1 x RS-485 1 x RTC Battery 1 x Speaker 2 x Touch Button 1 x USB 2.0 2 x USB 2.0 + DMIC	1 x A-MIC 2 x GPIO 1 x I ² C 1 x M.2 2230 E-Key 1 x Micro SD Slot 1 x MIPI DSI 1 x RS-232 1 x RS-485 1 x RTC Battery 1 x Speaker 2 x Touch Button 1 x USB 2.0 2 x USB 2.0 + DMIC	
Power Requirement	+12V ~ 26V DC in	+12V ~ 24V DC in	+12V ~ 24V DC in	DC 12V ~ 24V	DC 12V ~ 24V	DC 12V ~ 24V	DC 12V ~ 24V	DC 12V ~ 24V	
Power Type	AT/ ATX (Default is AT Mode)	AT/ ATX (Default is AT Mode)	AT/ ATX (Default is AT Mode)	AT	AT	AT	AT	AT	
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)	-30°C ~ 60°C (-22°F ~ 140°F)	-30°C ~ 60°C (-22°F ~ 140°F)	-30°C ~ 60°C (-22°F ~ 140°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)	-20°C ~ 60°C (-4°F ~ 140°F)	-30°C ~ 60°C (-22°F ~ 140°F)	-30°C ~ 60°C (-22°F ~ 140°F)	-30°C ~ 60°C (-22°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	40°C @ 95% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing	
OS Information	Windows 10 IoT, Linux, x86 Android 8.1	Windows 10 IoT, Linux, x86 Android 8.1	Windows 10 IoT, Linux, x86 Android 8.1	Android 13	Android 13	Android 13	Windows 10 IoT, Windows 11 IoT (w/ TPM) Linux Ubuntu 22.04	Windows 10 IoT, Windows 11 IoT (w/ TPM) Linux Ubuntu 22.04	
Dimension	183.1 x 115.8 x 48.6 mm	387 x 235 x 46 mm	501.9 x 296.2 x 52.4 mm	170 x 110 x 6 mm	143 x 228.6 x 2.5 mm	326.5 x 253.5 x 9.1 mm	183.1 x 115.9 x 24.3 mm	252 x 166 x 38 mm	
Weight	700 g	2.5 kg	4.1 kg	TBD	TBD	TBD	TBD	TBD	
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	CE, FCC Class A	



Panel PC / Monitor / Mobile

Open Frame Panel PC



Model Number	OFP-15W38	OFP-21W38	OFP-15W42	OFP-21W42	OFR-15WMX	OFR-21WMX
LCD Size	15.6", 16:9	21.5", 16:9	15.6", 16:9	21.5", 16:9	15.6", 16:9	21.5", 16:9
Resolution	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
Luminance	220 cd/m ²	250 cd/m ²	220 cd/m ²	250 cd/m ²	350 cd/m ²	500 cd/m ²
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)	89 (U), 89 (D), 89 (L), 89 (R)	89 (U), 89 (D), 89 (L), 89 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Touch Type	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points
Processor	Onboard Tiger Lake U 11th Intel® Core™ SoC i7/i5/i3 BGA Processor or Celeron® BGA Processor	Onboard Tiger Lake U 11th Intel® Core™ SoC i7/i5/i3 BGA Processor or Celeron® BGA Processor	Onboard Intel® Raptor Lake-PS Processor	Onboard Intel® Raptor Lake-PS Processor	Onboard MT8365 CPU, Quad-core ARM 2.0GHz Cortex-A53 MP Core, ARM Mali G52 GPU	Onboard MT8365 CPU, Quad-core ARM 2.0GHz Cortex-A53 MP Core, ARM Mali G52 GPU
System Memory	4GB DDR4 Memory (Option up to 64GB)	4GB DDR4 Memory (Option up to 64GB)	1 x 262-pin DDR5 4800MHz SO-DIMM up to 32GB	1 x 262-pin DDR5 4800MHz SO-DIMM up to 32GB	4GB DDR4	4GB DDR4
Wireless	Option by M.2 WIFI/ BT Module	Option by M.2 WIFI/ BT Module	Option by M.2 WIFI/ BT Module	Option by M.2 WIFI/ BT Module	Option by M.2 WIFI/BT Module	Option by M.2 WIFI/BT Module
Storage	Default with 64GB M.2 (Option for SATA Interface 2.5" HDD/ SSD)	Default with 64GB M.2 (Option for SATA Interface 2.5" HDD/ SSD)	Default with 64GB M.2 (Option for SATA Interface 2.5" HDD/ SSD)	Default with 64GB M.2 (Option for SATA Interface 2.5" HDD/ SSD)	32GB eMMC	32GB eMMC
External I/O Connector	3 x USB 3.1 Gen2, 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 Gen2, 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	4 x USB 3.2 Gen2 1 x RS-232 (Default)/422/485 2 x Intel® I226LM 2.5 GbE 4 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	4 x USB 3.2 Gen2 1 x RS-232 (Default)/422/485 2 x Intel® I226LM 2.5 GbE 4 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	1 x Audio amplifier 1 x DC Jack 3 x HDMI 2.0 In 1 x HDMI 2.0 Out 1 x Line-out 1 x RS-232/422/485 DB9 4 x USB 3.0 Type A 1 x M.2 Key M	1 x Audio amplifier 1 x DC Jack 3 x HDMI 2.0 In 1 x HDMI 2.0 Out 1 x Line-out 1 x RS-232/422/485 DB9 4 x USB 3.0 Type A 1 x M.2 Key M
Internal I/O Connector	1 x RS-232/422/485 (Optional) 3 x RS-232 (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 RS-232/422/485 (Optional) 3 x RS-232 (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 RS-232/422/485 (Optional) 3 x RS-232 (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 M.2 Key-M 2280 (PCI-ex4) Slot for Storage NVMe SSD	1 x RS-232/422/485 (Optional) 3 x RS-232 (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 M.2 Key-M 2280 (PCI-ex4) Slot for Storage NVMe SSD	1 x TV 1 x HR 1 x FAN	1 x TV 1 x HR 1 x FAN
Power Requirement	DC in +12~24V	DC in +12~24V	DC in +12~24V	DC in +12~24V	DC 12V	DC 12V
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	AT
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)	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)	-20°C ~ 60°C (-4°F ~ 140°F)
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
OS Information	Windows 10 IoT, Windows 11 IoT, Linux	Windows 10 IoT, Windows 11 IoT, Linux	Windows 10 IoT, Windows 11 IoT, Linux	Windows 10 IoT, Windows 11 IoT, Linux	Windows 10 IoT, Linux	Windows 10 IoT, Linux
Dimension	387 x 235 x 48 mm	501.9 x 296.2 x 55 mm	387 x 235 x 48 mm	501.9 x 296.2 x 55 mm	501.9 x 296.2 x 55 mm	501.9 x 296.2 x 55 mm
Weight	2.9 kg	5.2 kg	2.9 kg	5.2 kg	5.2 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	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/ 1600 x 1200
	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 x 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 WHOL Size: (LWH) 72.2 x 69 x 14 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 WHOL Size: (LWH) 80 x 45 x 7.4 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 Date 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 Date Rate: 106k, 212k, 424k, 848k bps Frequency: 13.56MHz



Panel PC / Monitor / Mobile

Medical Panel PC



Model Number	HID-2340	HID-2334	HID-2138	HID-2132	HID-2100	HID-1540
LCD Size, Display Type	23.8" Full HD	23.8", FHD	21.5", Full HD	21.5", Full HD	21.5", Full HD	15.6", Full HD
Resolution	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
Pixel Pitch	0.274 x 0.274	0.274 x 0.274	0.248 x 0.248	0.248 x 0.248	0.248 x 0.248	0.179 x 0.179
Luminance	250 cd/m ²	250 cd/m ²	250 cd/m ²	250 cd/m ²	250 cd/m ²	500 cd/m ²
Contrast Ratio	3000	3000	1000	1000	1000	1000
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)	89 (U), 89 (D), 89 (L), 89 (R)	89 (U), 89 (D), 89 (L), 89 (R)
Response Time	16 ms	16 ms	22 ms	22 ms	22 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	86%	86%	89%	89%	89%	89%
Touch Controller	USB Interface, EETI	USB Interface, EETI	USB Interface, EETI	USB Interface, EETI	USB Interface, EETI	USB Interface, EETI
SBC	HID ADLPS Motherboard	HID-2334 M/B + Charger Board	HID TGLP Motherboard	ARC-SKLU	HID-2100 AD Board	HID ADLPS Motherboard
Processor	12th Gen Intel® Core™ i7/i5/3/Celeron Processor	7th Generation Intel® Kaby Lake Core™ i7/i5/i3/ Celeron® Processor	11th Gen Intel® Core™ i7/i5/i3/Celeron Processor	6th Gen Intel® Core™ i7/i5/3/ Celeron Processor	N/A	12th Gen Intel® Core™ i7/i5/3/ Celeron Processor
I/O Chipset	EC ITE IT5782VG	EC ITE IT8518E	EC ITE IT8528E	EC ITE IT8528E	N/A	EC ITE IT5782VG
System Memory	1 x 262-pin DDR5 4800MHz SO-DIMM Socket up to 32GB Max (Min 8GB)	2 x 260pin SODIMM Socket up to 32GB DDR4 2400 SDRAM	2 x 260-pin DDR4 3200 MHz SO-DIMM socket up to 64GB Max	1 x 260pin SODIMM Socket up to 16GB DDR4 2133 SDRAM	N/A	1 x 262-pin DDR5 4800MHz SO-DIMM Socket up to 32GB Max (Min 8GB)
Expansion	Optional M.2 Key B 3042/3052/2280 x 1 CNVI and USB2.0 for WIFI x 1 Optional IET Expansion x 1	1 x M.2 (Key E, 2230) with PCIe x1 CNVI and USB2.0 for Wireless 1 x mini PCIe with SATA or PCIe1, mSATA	Optional PCIe Low Profile Card x 1 Optional M.2 Storage x 1 Optional M.2 5G Module x 1	1 x Full Size (Support Half Size, Auto Switch for mSATA, USB, PCIe Signal)	N/A	Optional M.2 Key B 3042/3052/2280 x 1 Optional M.2 Key E for WIFI x 1
Storage	1 x M.2 Key M Storage (Optional) 1 x 2.5" SSD (Optional)	1 x 2.5" SATA3 SSD	1 x M.2 Key-B 2242/3042/2260 for Storage	1 x 2.5" SATA3 SSD	N/A	1 x M.2 Key M Storage (Optional) 1 x 2.5" SSD (Optional)
USB	1 x USB 2.0, 3 x USB 3.0 1 x USB Type C, 1 x USB 1.1 (Isolated 5KV)	4 x USB 3.0	2 x USB 2.0 2 x USB Type C	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 1 x USB Type B	1 x USB 2.0 3 x USB 3.0 1 x USB Type C
COM Port	1 x RS-232/422/485 1 x RS-232 (Isolated 5KV)	N/A	Optional	1 x RS-232/422/485, 1 x RS-232 1 x RS-232 (Isolated 5KV)	N/A	1 x RS-232/422/485
Other	Optional 5.0M AF camera Optional Barcode Scanner Optional NFC, Optional Capture Card Optional IET Board, Optional WIFI/BT	Dual LED Reading Light Bar, I/O Cover Option for 2 x 6900mAh Hot Swappable Batteries and 4 Slot Charging Bay Option for 5.0M Auto Focus Camera with Cover	Option 5.0M AF Camera Optional Barcode Scanner Optional NFC Optional Handset	Option 5.0M AF Camera Optional Barcode Scanner Optional NFC Optional Handset	HDMI Input DP Input VGA Input DC Output	Optional 5.0M AF Camera Optional NFC Optional WIFI/ BT
Display Chipset	Intel® 12th Generation CPU Integrated	Intel® HD Graphics 620	Intel® 11th Generation CPU Integrated	Intel® HD Graphics 520	N/A	Intel® 12th Generation CPU Integrated
Audio	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S	RTD2525AR-CG Integrated	Realtek ALC888S
Audio Interface	Line-out, Mic-in, 2 x 2W Speaker	2 x 2W	Line-out, Mic-in, 2 x 2W Speaker	2 x 0.5W	Line-out, Mic-in, 2 x 2W Speaker	Line-out, Mic-in, 2 x 2W Speaker
Ethernet	1 x Intel® I225LM Gigabit Ethernet 1 x Intel® I226LM Gigabit Ethernet	1 x Intel® I211AT, 1 x Intel® I219LM	1 x Intel® I219LM Gigabit Ethernet PHY 1 x Intel® I226LM Gigabit Ethernet PHY	1 x Intel® I219LM, 1 x Intel® I211AT 1 x Intel® I210AT (Isolated 5KV) on IET Module	N/A	1 x Intel® I225LM Gigabit Ethernet 1 x Intel® I226LM Gigabit Ethernet
Adapter	AC/ DC Medical Power Adapter Output: 120W Adapter (24V/ 5A Adapter)	AC/ DC Medical Power Adapter Output: 120W Adapter (24V/ 5A Adapter)	AC/ DC Medical Power Adapter Output: 120W Adapter (24V/ 5A Adapter)	AC/ DC Medical Power Adapter Output: 90W Adapter (19V/ 4.74A Adapter)	AC/ DC 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	Plastic, Plastic	Plastic, Plastic
Dimension	592 x 382 x 49.5mm	380 x 587 x 45.5mm	539.6 x 342.6 x 45.4 mm	539.6 x 342.6 x 45.2 mm	539.6 x 342.6 x 45.5 mm	400 x 263 x 42.5 mm
Weight	6.0 kg	6.9 kg (without Batteries)	4.8 kg	5.6 kg	5.3 kg	2.3 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)	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)	-30°C ~ 70°C (-22°F ~ 158°F)	-10°C ~ 60°C (14°F ~ 140°F)	-20°C ~ 60°C (-4°F ~ 140°F)	-20°C ~ 60°C (-4°F ~ 140°F)	-10°C ~ 60°C (14°F ~ 140°F)
Certification	CE, FCC Class B, UL60601-1	CE, FCC Class B, UL60601-1 4th Edition	CE, FCC Class B, UL60601-1	CE, FCC Class B, UL60601-1 4th Edition	CE, FCC Class B	CE, FCC Class B, UL60601-1
OS Information	Windows 10 IoT, Linux	Win 10/ Linux	Win 10/ Linux	Win 7/ 10/ Linux	N/A	Win10 64bit, 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	6.8 A
Output Voltage Per Battery	14.4 V
Output Power	12V/ 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



Panel PC / Monitor / Mobile

Industrial Display



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	PCAP Multi-touch up to 10 Points	PCAP Multi-touch 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 9V ~ 36V DC in)	+12V DC in (Option for 9V ~ 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	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points	PCAP Multi-touch up to 10 Points
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 9V ~ 36V DC in)	+12V DC in (Option for 9V ~ 36V DC in)	+12V DC in (Option for 9V ~ 36V DC in)	+12V DC in (Option for 9V ~ 36V DC in)	+12V DC in (Option for 9V ~ 36V DC in)	+12V DC in (Option for 9V ~ 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 -10°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)

Mobile Tablet / POS Terminal



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	1x Audio Jack, 2x USB 2.0 Type A, 1x Micro SD 1x DC Jack, 1x HDMI Output
Control Button	1x Power Button 1x Barcode Scanner Trigger
LED Indicator	1x 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

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 5V/ 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: 200 mm/s Maximum Print Width: 72 mm Maximum Paper Width: 80 mm 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



Model Number	PT58	RiVar-1502	Rity153	Rity103
LCD Size	15.6", 16:9	15.6", 16:9	15", 4:3	10.1", 16:9
Display Type, Resolution	Full HD, 1920 x 1080	Full HD, 1920 x 1080	XGA, 1024 x 768	WSVGA, 1024 x 600
Pixel Pitch	0.179 x 0.179 mm	0.179 x 0.179 mm	0.297 x 0.297 mm	0.2175 x 0.2088 mm
Luminance	250 cd/m ²	300 cd/m ²	500 cd/m ²	350 cd/m ²
Viewing Angle	85 (U), 85 (D), 85 (L), 85 (R)	89 (U), 89 (D), 89 (L), 89 (R)	88 (U), 88 (D), 88 (L), 88 (R)	70 (U), 70 (D), 70 (L), 70 (R)
Touch Type	Projective Capacitive	Projective Capacitive	5-Wire Resistive/ Projective Capacitive Touch	5-Wire Resistive/ Projective Capacitive Touch
Touch Light Transmission	85%	85%	RES 75% / PCT90%	RES 75% / PCT90%
Touch Controller	Build-in Touch Controller	Build-in Touch Controller	Onboard USB Touch (PenMount)/ USB Touch (EETI)	Onboard USB Touch (PenMount)/ USB Touch (EETI)
Processor	Intel® Celeron® Processor J6412 12th Gen. Intel® Core™ i3-1215U/ i5-1235U	Intel® Celeron® Processor J3455	Intel® Celeron® Processor N3350 1.1GHz	Intel® Celeron® Processor N3350 1.1GHz
System Chipset	Intel® Alder Lake SoC Intel® Elkhart Lake SoC	Intel® Apollo Lake SoC	Intel® Apollo Lake SoC	Intel® Apollo Lake SoC
System Memory	1 x 8GB DDR4 SO-DIMM Memory (Max. Support up to 16GB)	Default Onboard 4GB DDR4 SDRAM (Option up to 8GB)	1 x 204-Pin DDR3L 1066MHz SO-DIMM up to 8 GB	1 x 204-Pin DDR3L 1066MHz SO-DIMM up to 8 GB
Expansion	1 x M.2 Slot for Storage	1 x M.2 E Key Slot for .2/4/ 5G WiFi Module	1 x M.2 B Key Slot Support	1 x M.2 B Key Slot Support
Storage	M.2 2242 SATA 128GB	Default 128GB eMMC	1 x 2.5" Drive Bay, 1 x M.2 B Key Slot	1 x M.2 B Key Slot
I/O	3 x USB 2.0, 3 x USB 3.1 2 x COM Supported 5V/ 12V Output 1 x RJ-11 for Cash Drawer 12/ 24V 1 x Type C (DP+PD)	4 x USB 3.0 2 x COM Supported 5V/ 12V Output 1 x RJ-11 for Cash Drawer 12/ 24V 1 x HDMI	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	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
Display Chipset	Intel® UHD Graphics	Intel® HD Graphics 500	Intel® HD Graphics 500	Intel® HD Graphics 500
Audio	Realtek ALC887	ES8316C	Realtek 888S	Realtek 888S
Audio Interface	2 x 2W Speaker	2 x 2W Speaker	2 x 2W Speaker	2 x 2W Speaker
Ethernet	1 x RJ45 with Realtek RTL8111H	2 x RJ45 with Realtek 8111H	2 x Realtek RTL8111E-VB-GR	2 x Realtek RTL8111E-VB-GR
2nd LCD Panel	10.1" Resolution 1280 x 800	N/A	N/A	N/A
Optional	iButton Reader/ RFID Reader/ Fingerprint Reader/ 2D Scanner/ 2 x 20 Character LCM/ 3-Track MSR USB interface	Camera/ NFC/ MSR	MSR	N/A
Power Connector	Mini-din 4P for DC in w/ Lock Type, +19V DC in	DC Jack w/ Lock Type, +24V DC in	Mini-din 4P for DC in w/ Lock Type, +19V ~ 24V DC in	Mini-din 4P for DC in w/ Lock Type, +19V ~ 24V DC in
Power Type	ATX	ATX	AT/ ATX (ATX is Default Setting)	AT/ ATX (ATX is Default Setting)
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 65W Adapter (19V @ 3.42A Adapter)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (24V @ 2.5A Adapter)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 90W Adapter (24V @ 3.75A Adapter)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 90W Adapter (24V @ 3.75A Adapter)
Construction	Aluminum + Plastic	Plastic	Black Coverlens, ABS Plastic	Black Coverlens, ABS Plastic
IP Rating	IP65 for Front Panel	IP65 for Front Panel, IP41 for Rear	IP65 for Front Panel	IP65 for Front Panel
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)	-20°C ~ 60°C (-4°F ~ 140°F)	-10°C ~ 60°C (14°F ~ 140°F)	-10°C ~ 60°C (14°F ~ 140°F)
Dimension (L x W x H)	361.6 x 300.5 x 191.9 mm	391 x 251 x 44.5 mm	362.1 x 290.08 x 51 mm	260 x 178 x 42 mm
Weight	3 kg	2.7 kg	4 kg	1.8 kg
Certifications	CE/ FCC/ VCCI	CE/ FCC/ VCCI: Class B	CE, FCC Class B, VCCI	CE, FCC Class B, VCCI
OS Information	Windows 10 IoT (64 bit) Windows 11 (64 bit)	Windows 10, Android 8.1	Win10 IoT, Linux	Win10 IoT, Linux



Panel PC / Monitor / Mobile

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	800 x 600	1024 x 600	1024 x 600	1024 x 768
Pixel Pitch	0.0675 mm (H) x 0.2025 mm (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%
Touchn Controller	EETI	EETI	EETI	EETI
Touch Type	5W	5W	5W	5W
Interface	LVDS	LVDS	LVDS	LVDS
Operating Temperature	-10°C ~ 70°C	-10°C ~ 70°C	0°C ~ 50°C	-10°C ~ 70°C



Model Number	PCC-OFP-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	1280 x 800	1024 x 768	1024 x 768
Pixel Pitch	0.03925 (H) x 0.11775 (V)	0.1695 mm (H) x 0.1695 mm (V)	0.240 mm (H) x 0.240 mm (V)	0.297 mm (H) x 0.297 mm (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%
Touchn Controller	EETI	EETI	EETI	ILITEK
Touch Type	PCAP	PCAP	PCAP	PCAP
Interface	LVDS	LVDS	LVDS	LVDS
Operating Temperature	-20°C ~ 70°C	-10°C ~ 50°C	-20°C ~ 70°C	-10°C ~ 70°C



Model Number	PCC-PPC-AB15-R	PCC-SPC-AB17-R	PCC-PPC-AB21-R
LCD Size	15", 4:3	17", 4:3	21.5", 16:9
Display Type	XGA	SXGA	FHD
LED Driving Board	Panel Built-in	Panel Built-in	External Board
Resolution	1024 x 768	1280 x 1024	1920 x 1080
Pixel Pitch	0.297 mm (H) x 0.297 mm (V)	0.264 mm (H) x 0.264 mm (V)	0.248 mm (H) x 0.248 mm (V)
Luminance	300	350	250
Contract Ratio	2000	800	3000
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)
Response Time	16 ms	30 ms	18 ms
Touch light Transmission	80%	80%	80%
Touchn Controller	EETI	EETI	EETI
Touch Type	5W	5W	5W
Interface	LVDS	LVDS	LVDS
Operating Temperature	-10°C ~ 70°C	-10°C ~ 70°C	0°C ~ 50°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	1366 x 768	1920 x 1080	1280 x 1024	1920 x 1080	1920 x 1080
Pixel Pitch	0.252 mm (H) x 0.252 mm (V)	0.17925 (H) x 0.17925 (V)	0.264 mm (H) x 0.264 mm (V)	0.24795 mm (H) x 0.24795 mm (V)	0.2745 mm (H) x 0.2745 mm (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%
Touchn Controller	WEIDA	WEIDA	EETI	EETI	EETI
Touch Type	PCAP	PCAP	PCAP	PCAP	PCAP
Interface	LVDS	LVDS	LVDS	LVDS	LVDS
Operating Temperature	0°C ~ 60°C	-20°C ~ 70°C	-20°C ~ 70°C	0°C ~ 50°C	0°C ~ 50°C



Digital Paper

Digital Paper

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



Model Number	EPD-42T	EPD-4200	EPD-3133	EPD-2501	ENT-13T1
LCD Size	42"	42"	31.2"	25.3"	13.3"
Resolution	H: 2160 x V: 2880	H: 2160 x V: 2880	H: 2560 x V: 1800	H: 3200 x V: 1800	H: 1650 x V: 2200
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)
Touch Type	Projective Capacitive	Cover Lens Only	Projective Capacitive	Cover Lens Only	Projective Capacitive
Processor	NXP i.MX 7 Dual Processor/ Dual Arm® Cortex®-A7 Cores and Cortex-M4	N/A	Onboard Intel® Celeron® SoC BGA Processor N3350 (Apollo Lake Platform)	Onboard Intel® Celeron® SoC BGA Processor N3350 (Apollo Lake Platform)	88IAP140A0-BTY2C012T404 (Cortex-A53 1.2GHz x 4 Core)
System Memory	On-Board 2GB DDR3L	N/A	1 x 204-Pin DDR3L 1866MTs S0-DIMM Up to 8GB	1 x 204-Pin DDR3L 1866MTs S0-DIMM up to 8GB	2GB DDR3L
Wireless	M.2 Wi-Fi/ Bluetooth Module (Optional)	N/A	mPCIe Wi-Fi/ Bluetooth Module (Optional)	mPCIe Wi-Fi/ Bluetooth Module (Optional)	Wi-Fi/ Bluetooth Module
Storage	On-Board 8GB eMMC	N/A	2.5" SATA3 SSD 64GB	2.5" SATA3 SSD 64GB	16GB eMMC NAND Flash Memory Approx. 10.86GB Free Storage
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
Power Requirement	DC +12V	DC +12V	DC +19V	DC +12V	Lithium-Ion Polymer Battery (2000mAh)
Power Type	AT	N/A	AT/ ATX	AT/ ATX	ATX
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 50°C (32°F ~ 122°F)	0°C ~ 50°C (32°F ~ 122°F)	0°C ~ 40°C (32°F ~ 104°F)	5°C ~ 35°C (41°F ~ 95°F)
Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20°C ~ 60°C (-4°F ~ 140°F)	-20°C ~ 60°C (-4 ~ 140°F)	0°C ~ 40°C (32°F ~ 104°F)
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 @ 90% Relative Humidity, Non-condensing	40°C @ 95% Relative Humidity, Non-condensing
Software Support	Android 5.1 (Default) Linux 4.15 (Yocto 2.1)	N/A	Android 8.1 (Default) Windows 10 IoT	Android 8.1 (Default) Windows 10 IoT	Android 5.1
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
Weight	7.5 kg	11.4 kg	7.2 kg	4.4 kg	0.352 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

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