Autumn / Winter 2023

INDUSTRIAL PC PRODUCT GUIDE

Shuttle®

Robust, durable, and reliable computing solutions for your future business, including factory automation, digital healthcare, smart retail, and IoT Edge-related applications

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DIGITAL SIGNAGE **SMART RETAIL** **EDGE COMPUTING** **IOT SOLUTION** **AUTOMATION CONTROL** **SMART MEDICAL** **KIOSK SOLUTION**
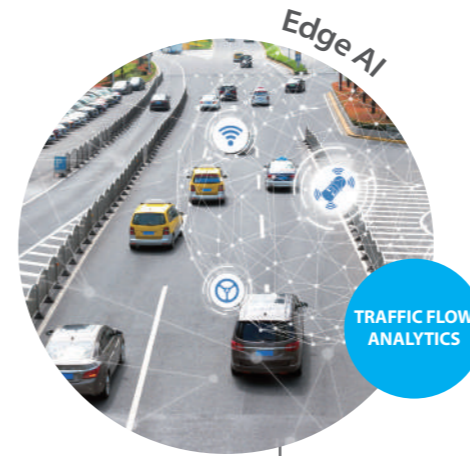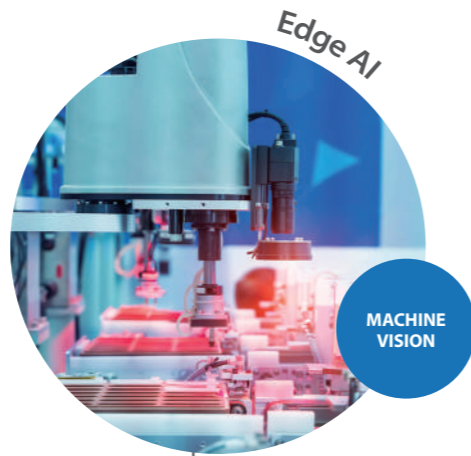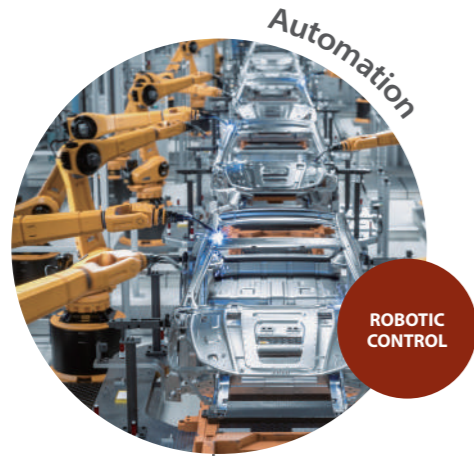
Company Profile

Since being founded in 1983, Shuttle has laid a solid foundation in developing compact commercial and industrial computers. We are proud of our ability to innovate, design and manufacture cutting-edge computer products, including mini PCs, all-in-one PCs, edge computing, embedded computers, and industrial and medical-grade Panel PCs, which are widely integrated into automation control, intelligent self-service kiosks, digital signage, IP monitoring edge computing, machine vision, VR/AR and other solutions, and have established a good reputation in different industries such as manufacturing, hospitality, retail, healthcare, and business.

With the rapid development of advanced technologies such as artificial intelligence and the Internet of Things, we continuously strengthen our research and development technology and enhance our system integration capabilities to provide a high-quality, diverse, and competitive product portfolio to help our customers win projects and further improve efficiency, productivity, and effectiveness.

Applications

Automation

ROBOTIC CONTROL

Edge AI

MACHINE VISION

Edge AI

TRAFFIC FLOW ANALYTICS

Security

SURVEILLANCE / NVR

IPC Product Line

Smart Retail

OUTDOOR DIGITAL SIGNAGE

Smart Retail

SELF SERVICE KIOSKS

Video Wall

OUTDOOR VIDEO WALL/ CONTROL ROOM

Medical

HOSPITAL / NURSING STATION

IOT EDGE COMPUTER

ULTRA-COMPACT IOT SOLUTION

Ultra-compact industrial-grade PC with a fanless design in a sturdy metal chassis, intended for DIN-Rail or VESA mounting, offers various external connection options, ideal for IoT edge computing and automation.

EN01E

Entering A New Era of IoT

Intelligent Platform for Data-Intensive Edge Applications

The EN01E is Shuttle's smallest full-featured PC, designed for visual signage and intelligent edge applications. Powered by an Intel® Atom™ x5-E3940 processor, the EN01E offers optimized cost and the best application performance, all within a palm-sized dimension of just 0.4L. With its rugged, fanless design, it can withstand a wide range of temperatures from-20 to 60°C and serves as an intelligent platform for IoT edge applications. Ideal for use in the industrial automation, transportation, and communications sectors.

Fanless · Vesa Mount · Wide Temperature · Din Rail

Features

- Ultra-small industrial-grade PC : 92 x 54 x 90 mm
- Built-in Gigabit LAN and support optional 4G/LTE network extension kit
- 2 x USB 3.2 Gen1, 1 x micro USB, 1 x HDMI, M.2 3042, and Micro SD card reader
- Optional PoE function (PSE01/PD01) for simplified on-site installation
- Designed for Extreme Environments : -20~60°C wide temperatures range and fanless architecture
- Equipped with Intel® Atom® x5-E3940 processor

		EN01E
COOLING SYSTEM		Fanless
PROCESSOR		Intel® Atom® x5-E3940 9.5W processor
CHIPSET		Integrated in CPU
GRAPHICS		Intel® HD Graphics 500
DISPLAY RESOLUTION MAX.		HDMI 3840 x 2160@30Hz
DISPLAY OUTPUT		1 Display
VIDEO DECODER		MPEG2, WMV9, VC1, H.264, JPEG/MPEG, MVC, HEVC/H.265, VP8, VP9
MEMORY		8GB / LPDDR4 2400 MHz
STORAGE		64GB eMMC 1 x micro SD card slot
EXPANSION SLOTS		1 x M.2 3042, B Key
VIDEO OUTPUT	HDMI Port	1 x HDMI 1.4
I/O PORT	USB 3.2 Gen1 USB 2.0 (Micro A/B) SIM slot	2 1 1 x Nano SIM slot
NETWORK	LAN WLAN	1 x Gigabit LAN 1 x POE-PD or POE-PSE (Optional) Optional (LN007 + WLN-M)
VESA		Bracket included
DIMENSION (L/W/H) mm		92.4 x 54.4 x 90
WEIGHT	NW (kg) GW (kg)	0.48 1.03
CERTIFICATION		CB, CE, BSMI, cTUVus, FCC, RCM, RoHS, VCCI
OPERATING TEMPERATURE (ºC)		-20~60
CHASSIS		Metal
POWER SUPPLY	Power Input Power Adapter	12V~19V DC in 40W/65W 19V adapter (Optional)
OPERATING SYSTEM		Windows 10 64bit, Linux
OPTIONAL ACCESSORIES		PLA01, PSE01, PD01

EMBEDDED
BOX PC

FANLESS, CUSTOMIZABLE, POWERFUL TO TACKLE DIVERSE TASKS

Embedded Box PCs combine a fanless thermal and a robust aluminum chassis to remain stable in harsh operating conditions. With customizable modular design and multiple interfaces, the PCs are ready to suit particular tasks.

Shuttle

COM3   COM2   USB 2.0   USB 2.0   HDMI

BPCAL02 / BPCAL03

Intel® Alder Lake-Based

Real-Time Edge Processing with Unmatched Performance

Shuttle BPCAL02 and BPCAL03 are high-performance and flexible embedded box PCs that handle various edge computing applications. Equipped with Intel® 12th Gen Alder Lake processor with built-in Intel® Iris Xe graphics*, which adopts a hybrid architecture design that enhances computing and loading efficiency. Host a dual-channel memory slot supporting DDR5-4800 maximum of up to 64GB, resulting in fast load time. It has rich I/O, such as USB 3.2 Gen 2, USB 2.0, RS232, HDMI 2.0, Intel® LAN, and M.2 slot. Furthermore, the BPCAL03 supports a working temperature range of -20° C to +60°C. The BPCAL02 / BPCAL03 can provide a reliable and efficient solution for AI, machine learning, monitoring and controlling industrial processes, analyzing and recognizing images and videos, and more.

Features

- 12th Gen. Intel® Alder Lake Core™ / Celeron processors
- Max four independent displays via HDMI 2.0 and optional video output expansion kit
- Dual Intel® LAN, 4 x USB 3.2 Gen 2, 4 x USB 2.0, 3 x RS232, M.2 2280 Type M, and M.2 2230 Type E
- Modularity for I/O configurations to meet diverse application needs
- Multiple installation support : VESA, Ear Mount, DIN-rail
- Operating Temperature :   BPCAL02: 0°C ~ 40°C   BPCAL03: -20°C ~ 60°C

∗ Intel® Iris Xe graphics for Core i5 / i7 model only

4K UHD   Dual LAN   Fanless

BPCEL02/ BPCEL03/BPCEL07

Intel Elkhart Lake-Based

Accelerate Your IoT Innovations with Powerful Computing

Shuttle BPCEL02/BPCEL03/BPCEL07 are powerful and versatile fanless embedded PCs designed with the Intel® Elkhart Lake platform, offering multiple processor options to meet different performance requirements. The series comes in a rich set of I/O and expansion interfaces, including dual Intel 2.5GbE, 4x USB 3.2 Gen 1, 4x USB 2.0, 3x RS232, M.2 2280 Type M, and M.2 2230 Type E. The modular design of this series allows for different I/O expansions and replacements to meet various customization needs. Moreover, the aluminum alloy housing design provides excellent heat dissipation and anti-interference capabilities, supporting a broad working temperature range of -30°C to +70°C. It is well-suited for several application fields, including industrial control, automation, IoT, edge computing, retail, and more.

Features

- CPU options of Intel® Elkhart Lake Pentium® J6426/ Celeron® J6412/ Atom® x6425E
- Dual independent display via HDMI (Support up to triple display through optional video output expansion kit)
- 4 x USB 3.2 Gen 1, 4 x USB 2.0, 3 x RS232, M.2 2280 Type M, and M.2 2230 Type E
- Dual Intel® 2.5G LAN supports Wake On LAN
- Dual DDR4 3200MHz memory, up to 32GB
- Multiple installation support : VESA, Ear Mount, DIN-rail

	BPCEL02	BPCEL03	BPCEL07
PROCESSOR	Pentium® J6426 Celeron® J6412 Atom® x6425E	Pentium® J6426 Celeron® J6412 Atom® x6425E	Atom® x6425E
OPERATING TEMPERATURE	0°C ~ 40°C	-20°C ~ 60°C	-30°C ~ 70°C
BUNDLED ADAPTER	19V/4.74A 90W external adapter	19V/7.89A 150W external adapter	19V/7.89A 150W external adapter

Wide Range Voltage Support (Optional)

Wide Temperature

Dual 2.5G LAN

Fanless

|		BPCAL02	BPCAL03	BPCEL02	BPCEL03	BPCEL07
SYSTEM	Processor	12th Gen. Intel® Alder Lake Core™ i3-1215UE (default) Optional: i5-1235U, i5-1245UE, i7-1255U, i7-1265UE, Celeron® 7305E		Intel® Elkhart Lake Celeron® J6412 (default) Optional : Pentium® J6426, Atom® x6425E		Intel® Elkhart Lake Atom® x6425E
	Memory	2 x 262 pin SO-DIMM up to 64GB Dual Channel DDR5 4800 MHz		2 x 260 pin SO-DIMM up to 32GB Dual Channel DDR4 3200 MHz		
	BIOS	AMI UEFI 64 Mbit		AMI UEFI 64 Mbit		
GRAPHICS	Chipset Display Interface Display Output Video Decoder	Intel® UHD or Iris® Xe Graphics 2 x HDMI 2.0 : 4096 x 2160@60Hz Max : 4 independent or clone WMV,AVC/H264,JPEG/MJPEG,HEVC/H265,VP9,AV1		Intel® UHD Graphics 1 x HDMI 2.0 : 4096 x 2160@60Hz 1 x HDMI 1.4 : 4096 x 2160@30Hz Max : 3 independent or clone MPEG-2,WMV9/VC1,H.264,JPEG/MJPEG,H.265/HEVC,VP8,VP9		
STORAGE	Internal	1 x M.2 2280 M key (PCIe NVMe / SATA) 1 x 2.5" HDD / SSD (Optional)		1 x M.2 2280 M key (PCIe NVMe / SATA) 1 x 2.5" HDD/SSD (Optional)		
AUDIO	Audio Codec	Realtek ALC888S-VD 2-channel		Realtek ALC888S-VD 2-channel		
NETWORK	Ethernet	2 x Intel® LAN Support Wake On LAN		2 x Intel® 2.5 Gb LAN Support Wake On LAN		
	WLAN	Realtek RTL8821CE 802.11a/b/g/n/ac + Bluetooth 5.0 WLAN card M.2 2230 E key (Optional) External antenna (Dipole) x 2 (Optional)		Realtek RTL8821CE 802.11a/b/g/n/ac + Bluetooth 5.0 WLAN card M.2 2230 E key (Optional) External antenna (Dipole) x 2 (Optional)		
I/O INTERFACE	Serial Ports	1 x RS-232 (DB-9) 2 x RS-232/422/485 (DB-9) (RS-232 with power supply : Ring in/ 5V (standard) &12V (with specific optional board))		1 x RS-232 (DB-9) 2 x RS-232/422/485 (DB-9) (RS-232 with power supply : ring in/ 5V (standard) &12V (with specific optional board))		
	USB	4 x USB3.2 Gen 2 (Type A) 4 x USB2.0		4 x USB3.2 Gen 1 (Type A) 4 x USB2.0		
	Audio	1 x Line-out 1 x Mic-in		1 x Line-out 1 x Mic-in		
POWER	Bundled Adapter	19V/4.74A 90W external adapter	19V/7.89A 150W external adapter	19V/4.74A 90W external adapter	19V/7.89A 150W external adapter	19V/7.89A 150W external adapter
	Option	With option wide range board, MB support 9-36V DC-in		With option wide range board, MB support 9-36V DC-in		
WATCHDOG TIMER	Watchdog	Support watchdog		Support watchdog		
OS SUPPORT	OS Support	Windows 11 64bit / Linux 64bit		Windows 11 64bit / Linux 64bit		
MECHANISM	Mounting	VESA Mount 75 x 75 mm / Ear Mount 256 x 100 mm / Din Rail		VESA Mount 75 x 75 mm / Ear Mount 256 x 100 mm / Din Rail		
	Dimension (L/W/H) Weight	245 x 169 x 57 2.85kg	245 x 169 x 57 2.85kg	245 x 169 x 57 2.85kg	245 x 169 x 57 2.85kg	245 x 169 x 57 2.85kg
ENVIRONMENT	Operating Temperature Relative Humidity EMC Safety	0°C ~ 40°C 20% - 80% RH (non-condensing) CE, FCC, VCCI, BSMI, RCM CB, CEC, cTUVus, BSMI, EAC	-20°C ~ 60°C 20% - 80% RH (non-condensing) CE, FCC, VCCI, BSMI, RCM CB, CEC, cTUVus, BSMI, EAC	0°C ~ 40°C 20% - 80% RH (non-condensing) CE, FCC, VCCI, BSMI, RCM CB, CEC, cTUVus, BSMI, EAC	-20°C ~ 60°C 20% - 80% RH (non-condensing) CE, FCC, VCCI, BSMI, RCM CB, CEC, cTUVus, BSMI, EAC	-30°C ~ 70°C 20% - 80% RH (non-condensing) CE, FCC, VCCI, BSMI, RCM CB, CEC, cTUVus, BSMI, EAC

		BPCWL02	BPCWL03
SYSTEM	Processor	8th Gen. Intel® Whiskey Lake Core™ i3-8145UE (default) Optional : i5-8265U, i5-8365UE, i7-8565U, i7-8665UE, Celeron® 4305UE	
	Memory	2 x 260 pin SO-DIMM up to 64GB Dual Channel DDR4 2666MHz	
	BIOS	AMI UEFI 64 Mbit	
GRAPHICS	Chipset Display Interface Display Output Video Decoder	Intel® UHD Graphics 2 x HDMI 1.4b : 4096 x 2160@30Hz Max: 3 independent or clone MPEG2, WMV9/VC1, AVC/H.264, JPEG/MPEG, HEVC/H.265, VP8, VP9	
STORAGE	Internal	1 x M.2 2280 M key (PCIe NVMe / SATA)	
AUDIO	Audio Codec	Realtek ALC662 / ALC888S 2-channel	
NETWORK	Ethernet	2 x Intel® Gigabit LAN Support Wake On LAN	
	WLAN	Realtek RTL8821CE 802.11a/b/g/n/ac + Bluetooth 5.0 WLAN card M.2 2230 E key (Optional) External antenna (Dipole) x2 (Optional)	
I/O INTERFACE	Serial Ports	1 x RS-232 (DB-9) 2 x RS-232/422/485 (D B-9) (RS-232 with power supply: ring in/ 5V (standard) & 12V (with specific optional board))	
	USB	4 x USB3.2 Gen 1(Type A) 4 x USB2.0	
	Audio	1 x Line-out 1 x Mic-in	
POWER	Bundled Adapter	19V/4.74A 90W external adapter	19V/7.89A 150W external adapter
	Option	With option wide range board, MB support 9-36V DC-in	
WATCHDOG TIMER	Watchdog	Support watchdog	
OS SUPPORT	OS Support	Windows 10/11 64bit / Linux 64bit	
MECHANISM	Mounting	VESA Mount 75 x 75 mm / Ear Mount 256 x 100 mm / Din Rail	
	Dimension (L/W/H) Weight	245 x 169 x 57 2.85kg	245 x 169 x 57 2.85kg
ENVIRONMENT	Operating Temperature Relative Humidity EMC Safety	0°C ~ 40°C 20% - 80% RH (non-condensing) CE, FCC, VCCI, BSMI, RCM CB, CEC, cTUVus, BSMI, EAC	-20°C ~ 60°C 20% - 80% RH (non-condensing) CE, FCC, VCCI, BSMI, RCM CB, CEC, cTUVus, BSMI, EAC

Flexible I/O Customization with Expansion Kits

Shuttle's Embedded Box PCs offer flexible I/O design, making it easy to customize and optimize IoT applications for maximum efficiency.
The front panel is divided into four sections that support optional expansion kits with daughter boards, allowing for the addition of I/O ports. Expansion must begin with Section 1, with subsequent kits occupying Section 2, and so on.
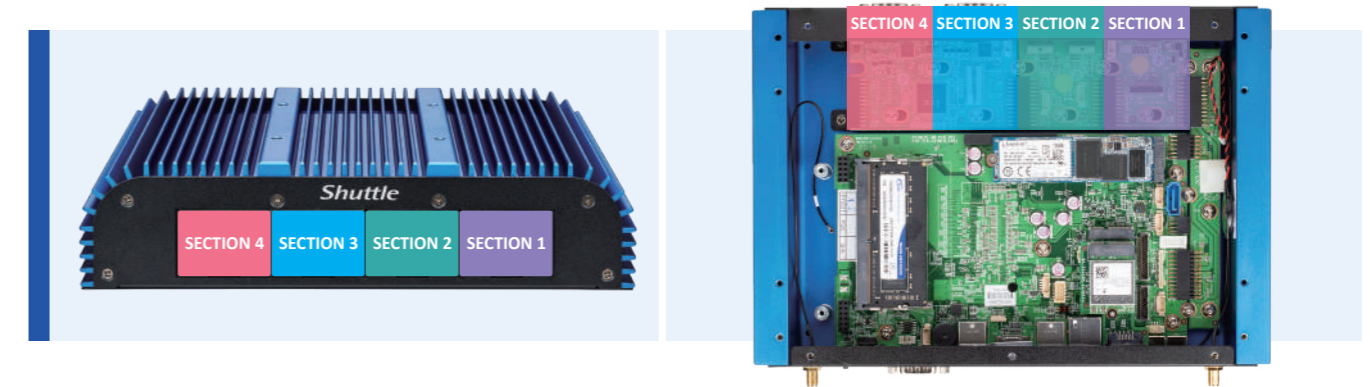
Guidance for Video Output Port Customized Configuration

BACK PANEL

DEFAULT VIDEO OUTPUT

HDMI 1.4 or HDMI 2.0

FRONT PANEL

VIDEO OPTIONS (SECTION 1)

HDMI 1.4 | HDMI 2.0
VGA | DisplayPort | DVI-I

VIDEO OPTIONS (SECTION 2)

VGA | DisplayPort

TOUCH
PANEL PC

RUGGED FANLESS PANEL PC
WITH FRONT IP65 PROTECTION

Shuttle's Industrial Panel PCs are built with rugged aluminum housing and come in screen sizes ranging from 15.6 to 21.5 inches, featuring multi-touch technology and flexible computing power.
Additionally, the I/O interfaces are customizable to meet your specific needs.

P21AL01/P21EL01

21.5" Multi-Touch Panel PC
Perfect for various Industrial and Commercial Applications

Shuttle's industrial-grade panel PCs come in a 21.5-inch size and offer multiple processor options suitable for IoT applications. The performance-oriented P21AL01 supports Intel® 12th Gen Alder Lake Core™ processors, supporting up to 64GB DDR5-4800 memory. Meanwhile, the P21EL01 offers CPU options of Intel® Elkhart Lake Atom®, Pentium®, and Celeron®, offering an excellent price-performance ratio. These panel PCs feature a rugged aluminum housing front bezel with IP65 dust and waterproof protection and a 10-point touch function. They offer four USB 3.2, three RS232, one HDMI, dual Intel® LAN, WiFi AC+Bluetooth 5.0, one M.2 2280 M key slot, and one SATA connector for flexible connectivity. These features make them ideal for industrial control, automation, and edge computing applications.

IP65 21.5" Multi-Touch Environments Easy Swap Storage
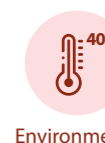
Features

- 21.5-inch 10-point capacitive multi-touch
- IP65 front panel waterproof protection
- 1 x HDMI 2.0, 4 x USB 3.2, 1 x RS232, 2 x RS232 /422 /485
  [RS232 with power supply : ring in/ 5V (standard) &12V (with specific optional board)]
- Provide one swappable 2.5" SSD SATA drive bay
- Dual Intel® LAN and WiFi 802.11ac+BT 5.0

	P21AL01	P21EL01
PROCESSOR	Core™ i3-1215UE (default), i5-1235U, i5-1245UE, i7-1255U, i7-1265UE, Celeron® 7305E	Pentium® J6426 Atom® x6425E Celeron® J6412

P15AL01/P15EL01

15.6" Multi-Touch Panel PC

The Perfect HMI Replacement for Industrial Automation

Shuttle P15AL01/P15EL01 integrates a 15.6-inch FHD TFT LCD panel and features an IP65-certified front bezel panel. They feature Intel® Alder Lake and Elkhart Lake processors, which deliver outstanding performance, efficiency, and connectivity for a wide range of IoT applications. Rich I/O interfaces include USB 3.2, RS232, HDMI 2.0, M.2 2280 M key, Intel® LAN, and IEEE 802.11ac WiFi + Bluetooth 5.0. Moreover, the series offers customized I/O configurations to integrate with industrial production architecture. Equipped with high-performance computing capability, it is suitable for human-machine interface (HMI), process control, infotainment, and kiosk.

| intel CORE i5 | intel CORE i7 | intel CORE i3 | intel PENTIUM | intel CELERON | intel ATOM | IP65 | 15.6" Multi-Touch | Fanless | Vesa Mount |

Features

- 15.6-inch 10-point capacitive multi-touch
- IP65 front panel waterproof protection
- 1 x HDMI 2.0, 4 x USB 3.2, 1 x RS232, 1 x M.2 2280 M key (Supports PCIe x 4 / SATA storage interface)
- Network connectivity : Intel® LAN, WiFi 802.11 a/b/g/n/ac + Bluetooth 5.0
- Customized I/O options : DVI-I, VGA, RS232, USB 2.0, POAG, M.2 2280, wide voltage range board, external antenna, etc.

	P15AL01	P15EL01
PROCESSOR	Core™ i3-1215UE (default), i5-1235U, i5-1245UE, i7-1255U, i7-1265UE, Celeron® 7305E	Pentium® J6426 Atom® x6425E Celeron® J6412

		P21AL01	P21EL01	P21WL01
SYSTEM	Processor	12th Gen. Intel® Alder Lake Core™ i3-1215UE (default) Optional : i5-1235U, i5-1245UE, i7-1255U, i7-1265UE, Celeron® 7305E	Intel® Elkhart Lake Celeron® J6412 (default) Optional : Pentium® J6426, Atom® x6425E	8th Gen. Intel® Whiskey Lake Core™ i3-8145UE (default) Optional : i5-8265U, i5-8365UE, i7-8565U, i7-8665UE, Celeron® 4305UE
	Memory	2 x 262 pin SO-DIMM up to 64GB Dual Channel DDR5 4800MHz	2 x 260 pin SO-DIMM up to 32GB Dual Channel DDR4 3200MHz	2 x 260 pin SO-DIMM up to 64GB Dual Channel DDR4 2666MHz
	BIOS	AMI UEFI 64bit	AMI UEFI 64bit	AMI UEFI 64bit
DISPLAY AND TOUCH SCREEN	Display	21.5" 1920 x 1080 Full HD TFT LED with 10-Point Projected Capacitive Multi-Touch	21.5" 1920 x 1080 Full HD TFT LED with 10-Point Projected Capacitive Multi-Touch	21.5" 1920 x 1080 Full HD TFT LED with 10-Point Projected Capacitive Multi-Touch
	Viewing Angle (H/V°)	89 (left), 89 (right), 89 (up), 89 (down)	89 (left), 89 (right), 89 (up), 89 (down)	89 (left), 89 (right), 89 (up), 89 (down)
	Brightness	500 cd/m2	500 cd/m2	500 cd/m2
	Contrast	1000 : 1	1000 : 1	1000 : 1
	Backlight Lifetime	30,000 hrs	30,000 hrs	30,000 hrs
GRAPHICS	Chipset	Intel® UHD or Iris® Xe Graphics	Intel® UHD Graphics	Intel® UHD Graphics
	Display Interface	Supports two independent displays 1 x HDMI 2.0 : 4096 x 2160@60Hz 1 x DVI : 1920 x 1080@60Hz	Supports two independent displays 1 x HDMI 2.0 : 4096 x 2160@60Hz 1 x DVI : 1920 x 1080@60Hz	Supports two independent displays 1 x HDMI 1.4b : 4096 x 2160@30Hz 1 x DVI-I : 1920 x 1080@60Hz
	Video Decoder	WMV,AVC/ H264,JPEG/ MJPEG,HEVC/ H265,VP9,AV1	MPEG-2,WMV9 / VC1,H.264,JPEG/ MJPEG,H.265/ HEVC,VP8,VP9	MPEG-2,WMV9/ VC1,H.264,JPEG/ MJPEG,H.265/ HEVC,VP8,VP9
STORAGE	Internal	1 x M.2 2280 M key (PCIe NVMe / SATA) 1 x Swappable 2.5" SSD SATA 3.0 drive bay (compatible 7mm)	1 x M.2 2280 M key (PCIe NVMe / SATA) 1 x Swappable 2.5" SSD SATA 3.0 drive bay (compatible 7mm)	1 x M.2 2280 M key (PCIe NVMe / SATA) 1 x Swappable 2.5" SSD SATA 3.0 drive bay (compatible 7mm)
AUDIO	Audio Codec	Realtek ALC888S-VD 2-channel	Realtek ALC888S-VD 2-channel	Realtek ALC662/ALC888S 2-channel
NETWORK	Ethernet	2 x Intel® LAN / Support Wake On LAN	2 x Intel® 2.5 Gb LAN / Support Wake On LAN	2 x Intel® Gigabit LAN / Support Wake On LAN
	WLAN	Realtek RTL8821CE 802.11a/b/g/n/ac + Bluetooth 5.0 (M.2 2230 E key) with 2 internal antenna(default)/external antenna (optional)	Realtek RTL8821CE 802.11a/b/g/n/ac + Bluetooth 5.0 (M.2 2230 E key) with 2 internal antenna(default)/external antenna (optional)	Realtek RTL8821CE 802.11a/b/g/n/ac + Bluetooth 5.0 (M.2 2230 E key) with 2 internal antenna(default)/external antenna (optional)
I/O INTERFACE	Serial Ports	1 x RS-232 (DB-9) 2 x RS-232/422/485 (DB-9) (RS-232 with power supply : Ring in/ 5V (standard) &12V (with specific optional board))	1 x RS-232 (DB-9) 2 x RS-232/422/485 (DB-9) (RS-232 with power supply : Ring in/ 5V (standard) &12V (with specific optional board))	1 x RS-232 (DB-9) 2 x RS-232/422/485 (DB-9) (RS-232 with power supply : Ring in/ 5V (standard) &12V (with specific optional board))
	USB	4 x USB3.2 Gen 2 (Type A)	4 x USB3.2 Gen 1 (Type A)	4 x USB3.2 Gen 1 (Type A)
	Audio	1 x Line-out / 1 x Mic-in	1 x Line-out / 1 x Mic-in	1 x Line-out / 1 x Mic-in
POWER	Bundled Adapter	19V/4.74A 90W external adapter	19V/4.74A 90W external adapter	19V/4.74A 90W external adapter
WATCHDOG TIMER	Watchdog	Support watchdog	Support watch dog	Support watchdog
OS SUPPORT	OS Support	Windows 11 64bit / Linux 64bit	Windows 11 64bit / Linux 64bit	Windows 10/11 64bit / Linux 64bit
MECHANISM	IP Rating	IP65 Front Panel Protection	IP65 Front Panel Protection	IP65 Front Panel Protection
	Mounting	VESA Mount 100 x 100 mm	VESA Mount 100 x 100 mm	VESA Mount 100 x 100 mm
	Dimension (W/H/D) mm	543 x 334 x 49.9	543 x 334 x 49.9	543 x 334 x 49.9
	Weight	7.6kg	7.6kg	7.6kg
ENVIRONMENT	Operating Temperature	0°C ~ 40°C	0°C ~ 40°C	0°C ~ 40°C
	Storage Temperature	-20°C ~ 60°C	-20°C ~ 60°C	-20°C ~ 60°C
	Relative Humidity	20% - 80% RH (non-condensing)	20% - 80% RH (non-condensing)	20% - 80% RH (non-condensing)
	EMC	CE, FCC, VCCI, BSMI, UKCA	CE, FCC, VCCI, BSMI, UKCA	CE, FCC, VCCI, BSMI, UKCA
	Safety	CB, CEC, cTUVus, BSMI, EAC	CB, CEC, cTUVus, BSMI, EAC	CB, CEC, cTUVus, BSMI, EAC
	RF	US, EU, Taiwan	US, EU, Taiwan	US, EU, Taiwan

		P15AL01	P15EL01	P15WL01
SYSTEM	Processor	12th Gen. Intel® Alder Lake Core™ i3-1215UE (default) Optional : i5-1235U, i5-1245UE, i7-1255U, i7-1265UE, Celeron® 7305E	Intel® Elkhart Lake Celeron® J6412 (default) Optional : Pentium® J6426, Atom® x6425E	8th Gen. Intel® Whiskey Lake Core™ i3-8145UE (default) Optional: i5-8265U, i5-8365UE, i7-8565U, i7-8665UE, Celeron® 4305UE
	Memory	2 x 262 pin SO-DIMM up to 64GB Dual Channel DDR5 4800MHz	2 x 260 pin SO-DIMM up to 32GB Dual Channel DDR4 3200MHz	2 x 260 pin SO-DIMM up to 64GB Dual Channel DDR4 2666MHz
	BIOS	AMI UEFI 64bit	AMI UEFI 64 bit	AMI UEFI 64bit
DISPLAY AND TOUCH SCREEN	Display Viewing Angle (H/V°) Brightness Contrast Backlight Lifetime	15.6" 1920 x 1080 Full HD LED with 10-Point Capacitive Multi-Touch 85 (left), 85 (right), 85 (up), 85 (down) 450/350/250 cd/m2 1000 : 1 50,000/30,000/15,000 hrs	15.6" 1920 x 1080 Full HD LED with 10-Point Capacitive Multi-Touch 85 (left), 85 (right), 85 (up), 85 (down) 450/350/250 cd/m2 1000 : 1 50,000/30,000/15,000 hrs	15.6" 1920 x 1080 Full HD LED with 10-Point Capacitive Multi-Touch 85 (left), 85 (right), 85 (up), 85 (down) 450/350/250 cd/m2 1000 : 1 50,000/30,000/15,000 hrs
GRAPHICS	Chipset	Intel® UHD or Iris® Xe Graphics	Intel® UHD Graphics	Intel® UHD Graphics
	Display Interface	Supports two independent displays 1 x HDMI 2.0 : 4096 x 2160@60Hz 1 x DVI-I (optional daughter board) 1 x VGA (optional daughter board)	Supports two independent displays 1 x HDMI 2.0 : 4096 x 2160@60Hz 1 x DVI-I (optional daughter board) 1 x VGA (optional daughter board)	Supports two independent displays 1 x HDMI 1.4b : 4096 x 2160@30Hz 1 x DVI-I (optional daughter board) 1 x VGA (optional daughter board)
	Video Decoder	WMV,AVC/ H264,JPEG/ MJPEG,HEVC/ H265,VP9,AV1	MPEG-2,WMV9/ VC1,H.264,JPEG/ MJPEG,H.265/ HEVC,VP8,VP9	MPEG2, WMV9/ VC1, AVC/ H.264, JPEG/ MPEG, HEVC/ H.265, VP8, VP9
STORAGE	Internal	1 x M.2 2280 M key (PCIe x4 or SATA, either one) Optional : 1 x M.2 M 2280 SSD, SATA I/F, slidable design 1 x M.2 M 2280 SSD, SATA I/F, fixed design (Either one of above)	1 x M.2 2280 M key (PCIe x4 or SATA, either one) Optional: 1 x M.2 M 2280 SSD, SATA I/F, slidable design 1 x M.2 M 2280 SSD, SATA I/F, fixed design (Either one of above)	1 x M.2 2280 M key (PCIe x4 or SATA, either one) Optional : 1 x M.2 M 2280 SSD, SATA I/F, slidable design 1 x M.2 M 2280 SSD, SATA I/F, fixed design (Either one of above)
AUDIO	Audio Codec	Realtek ALC888S-VD 2-channel	Realtek ALC888S-VD 2-channel	Realtek ALC662/ALC888S 2-channel
NETWORK	Ethernet	1 x Intel® LAN / Support Wake On LAN	1 x Intel® 2.5 Gb LAN / Support Wake On LAN	1 x Intel® Gigabit LAN / Support Wake On LAN
	WLAN	Realtek RTL8821CE 802.11a/b/g/n/ac + Bluetooth 5.0 (M.2 2230 E key) with 2 internal antenna (default)/external antenna (optional)	Realtek RTL8821CE 802.11a/b/g/n/ac + Bluetooth 5.0 (M.2 2230 E key) with 2 internal antenna (default) /external antenna (optional)	Realtek RTL8821CE 802.11a/b/g/n/ac + Bluetooth 5.0 (M.2 2230 E key) with 2 internal antenna (default) /external antenna (optional)
I/O INTERFACE	Serial Ports	1 x RS-232 (DB-9) 2 x RS-232/422/485 (DB-9) (RS-232 with power supply : Ring in/ 5V (standard) &12V (with specific optional board))	1 x RS-232 (DB-9) 2 x RS-232/422/485 (DB-9) (RS-232 with power supply : Ring in/ 5V (standard) &12V (with specific optional board))	1 x RS-232 (DB-9) 2 x RS-232/422/485 (DB-9) (RS-232 with power supply : Ring in/ 5V (standard) &12V (with specific optional board))
	USB	4 x USB3.2 Gen 2 (Type A)	4 x USB3.2 Gen 1 (Type A)	4 x USB3.2 Gen 1 (Type A)
	Audio	1 x Line-out / 1 x Mic-in	1 x Line-out / 1 x Mic-in	1 x Line-out / 1 x Mic-in
POWER	Bundled Adapter	19V/4.74A 90W external adapter	19V/4.74A 90W external adapter	19V/4.74A 90W external adapter
WATCHDOG TIMER	Watchdog	Support watchdog	Support watch dog	Support watchdog
OS SUPPORT	OS Support	Windows 11 64bit / Linux 64bit	Windows 11 64bit / Linux 64bit	Windows 10/11 64bit / Linux 64bit
MECHANISM	IP Rating Mounting Dimension (W/H/D) mm Weight	IP65 Front Panel Protection VESA Mount 100 x 100 mm 394 x 256 x 48.9 4.6kg	IP65 Front Panel Protection VESA Mount 100 x 100 mm 394 x 256 x 48.9 4.6kg	IP65 Front Panel Protection VESA Mount 100 x 100 mm 394 x 256 x 48.9 4.6kg
ENVIRONMENT	Operating Temperature Storage Temperature Relative Humidity EMC Safety RF	0°C ~ 40°C -20°C ~ 60°C 20% - 80% RH (non-condensing) CE, FCC, VCCI, BSMI, UKCA CB, CEC, cTUVus, BSMI, EAC EU, US, Taiwan	0°C ~ 40°C -20°C ~ 60°C 20% - 80% RH (non-condensing) CE, FCC, VCCI, BSMI, UKCA CB, CEC, cTUVus, BSMI, EAC EU, US, Taiwan	0°C ~ 40°C -20°C ~ 60°C 20% - 80% RH (non-condensing) CE, FCC, VCCI, BSMI, UKCA CB, CEC, cTUVus, BSMI, EAC EU, US, Taiwan

TOUCH PANEL PC

MEDICAL
PANEL PC

COMPLIANT WITH
MEDICAL SAFETY STANDARDS

Medical-grade panel PC by Shuttle features a rugged aluminum chassis with an antibacterial coating and an IP65-rated front panel that helps with hygiene and infection control. The series is suitable for any healthcare center with safety IEC/EN 60601-1, CE, and FCC Class- B medical certificates. This high-value panel PC comes with a customizable modular design to enhance system versatility.

M21WL01

Medical-Grade Panel PC

Fanless, IP65 Front Bezel, Modularized Design

The M21WL01 is a medical-grade panel PC with safety IEC/EN 60601-1, CE, and FCC class-B medical certificated, featuring a sizeable 21.5-inch FHD TFT LCD antibacterial touch housing that helps with infection control. Powered by Intel® Whiskey Lake-UE processor with a fanless design, M21WL01 delivers high-performance computing in durability and functionality. In terms of its flexible connectivity, the model includes four USB 3.2 Gen1, three RS232, dual Intel® Gigabit LAN, and WiFi 802.11ac+BT 5.0 and allows users to select different I/O ports to enhance system versatility. It is purpose-built for a medical application that complies with the requirement of medical electrical equipment and is suitable for the healthcare sector as an information terminal in the operating room, bedside, medical cart, and digital signage in hospital, etc.

Features

- Intel® Whiskey Lake-UE Celeron®, Core™ i3/i5/i7 processor

- Antibacterial substance throughout the front touch panel, rear and cable cover

- IP65 front panel waterproof protection

- I/O interfaces: 1x HDMI 1.4, 1x DVI-I, 4x USB 3.2 Gen1, 1x RS232, 2x RS232 /422 /485, RS232 with power supply: ring in/ 5V (standard) &12V (with specific optional board), 2x RJ-45, POAG

- Dual Intel Gigabit LAN and WiFi 802.11ac+BT 5.0

- Medical Certificate EMC & Safety: FCC Class-B, CE Mark Class-B, IEC/EN 60601-1

Environments   21.5" Multi-Touch   Fanless

M21WL01		
SYSTEM	Processor	8th Gen. Intel® Whiskey Lake Core™ i3-8145UE (default) Optional: i5-8265U, i5-8365UE, i7-8565U, i7-8665UE, Celeron® 4305UE
	Memory	2 x 260 pin SO-DIMM up to 64GB Dual Channel DDR4 2666MHz
	BIOS	AMI UEFI 64 bit
DISPLAY AND TOUCH SCREEN	Display	21.5" 1920 x 1080 Full HD TFT LED with Antibacterial 10-Point Projected Capacitive Multi-Touch
	Viewing Angle (H/V°)	89 (left), 89 (right), 89 (up), 89 (down)
	Brightness	500/350 cd/m2
	Contrast	1000 : 1
	Backlight Lifetime	30,000 hrs
GRAPHICS	Chipset	Intel UHD Graphics
	Display Interface	Supports two independent displays 1 x HDMI 1.4b : 4096 x 2160@30Hz 1 x DVI-I : 1920 x 1080@60Hz
	Video Decoder	MPEG2, WMV9/VC1, AVC/H.264, JPEG/MPEG, HEVC/H.265, VP8, VP9
STORAGE	Internal	1 x M.2 2280 M key (PCIe NVMe / SATA) 1 x Swappable 2.5" SSD SATA 3.0 drive bay (compatible 7mm)
AUDIO	Audio Codec	Realtek ALC662 / ALC888S 2-channel
NETWORK	Ethernet	2 x Intel® Gigabit LAN Support Wake On LAN
	WLAN	Realtek RTL8821CE 802.11a/b/g/n/ac + Bluetooth 5.0 (M.2 2230 E key) with 2 internal antenna(default)/external antenna (optional)
I/O INTERFACE	Serial Ports	1 x RS-232 (DB-9) 2 x RS-232/422/485 (DB-9) (RS-232 with power supply: ring in/ 5V (standard) & 12V (with specific optional board))
	USB	4 x USB3.2 Gen 1 (Type A)
	Audio	1 x Line-out 1 x Mic-in
	POAG	1 x POAG (standard)
POWER	Bundled Adapter	19V/4.74A 90W external medical adapter
WATCHDOG TIMER	Watchdog	Support watchdog
OS SUPPORT	OS Support	Windows 10/11 64bit / Linux 64bit
MECHANISM	IP Rating	IP65 Front Panel Protection
	Mounting	VESA Mount 100 x 100 mm
	Dimension (W/H/D) mm	543 x 334 x 49.9
	Weight	7.6kg
ENVIRONMENT	Operating Temperature	0°C ~ 40°C
	Storage Temperature	-20°C ~ 60°C
	Relative Humidity	20% - 80% RH (non-condensing)
	EMC	CE, FCC CLASS B
	Safety	cTUVus, CB (IEC/ EN 60601-1: 2005+A1: 2012)
	RF	US, EU

KIOSK

EMPOWERING BUSINESSES, ENHANCING EXPERIENCE

The interactive kiosk is a computer-like device featuring specialized hardware and software that can be deployed in any venue to offer self-service options and access applications.

K11WL02 / K15WL01
K21WL01 / K27WL04

X86-Based
Self-Service KIOSK

The kiosk is an advanced self-service terminal that seamlessly integrates hardware and software, offering businesses automation and efficiency. Powered by the Intel® 8th Gen Whiskey Lake processor and integrated Intel® UHD Graphics, this x86-based interactive kiosk is robust in computing, boasting four USB 3.2 Gen1, an RS232, and one Intel® Gigabit LAN. Its modular design is highly customizable and can support a wide range of peripherals such as 1D/2D scanners, thermal printers, NFC readers, IC card readers, payment devices, and webcams, tailored to meet specific business requirements like ticketing, check-in, guide maps, and other information services in entertainment and healthcare applications.

Features

- Intel® Whiskey Lake-U/UE processors

- 11.6/15.6/21.5/27-inch 1080P FHD, PCAP 10-point multi-touch screen

- Sturdy and robust SECC metal enclosure

- Mounting supports : Counter mount (optional), Pole mount (optional), Wall mount

- Provide 4 x USB 3.2 Gen1, 1 x RS232, 1 x Intel® Gigabit LAN, and WiFi 802.11ac + Bluetooth 4.2

- Support a wide range of peripherals of 1D/2D scanner, thermal printer, NFC/RFID reader, IC card reader, a payment device, and webcam

intel CELERON inside	intel CORE i3	intel CORE i7	intel CORE i5
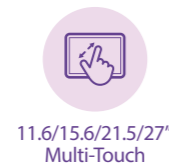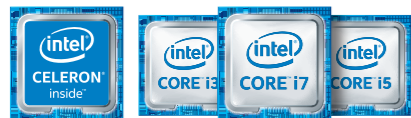
11.6/15.6/21.5/27" Multi-Touch | IP65 | Fanless | Simplified Service & Maintenance | Modular Design

KIOSK

K11RK02
K15RK01
K21RK01
K27RK04

ARM-Based Self-Service Kiosk

The ARM-based interactive self-service kiosks are designed with functionality in mind and are well-suited for delivering extensive self-service capability for desktop, counter, or wall mount deployment. Equipped with a Rockchip RK3368 Octa-Core processor, the kiosk provides eight USB 2.0, a Realtek Gigabit LAN, and WiFi 802.11 ac & Bluetooth 5.0. In addition, it can house a variety of peripherals of 1D/2D scanner, thermal printer, NFC/RFID reader, IC card reader, a payment device, and a webcam, customizing based on the functional requirements and service purposes to meet needs for ticketing, payments, check-in, queue management, guide map, information services, etc.

11.6/15.6/21.5/27" Multi-Touch
IP65
Robust Design
Modular Design
Flexible Customization
Android

Features

- Rockchip RK3368 Octa-core Cortex-A53 processor
- 11.6/15.6/21.5/27-inch 1080P FHD, PCAP 10-point multi-touch screen
- Customizable configurations to suit your brand and function
- Mounting supports : Counter mount (optional), Pole mount (optional), Wall mount
- Provide 8 x USB 2.0, Realtek Gigabit LAN, and WiFi 802.11ac + Bluetooth 5.0
- Support with customizable configurations: Thermometer, 1D/2D scanner, RFID/NFC/IC card reader, thermal printer, webcam, and hand sanitizer dispenser

		K11WL02	K15WL01	K21WL01	K27 WL04	K11RK02	K15RK01	K21RK01	K27RK04
SYSTEM	Processor	Intel® Whiskey Lake-U platform, Core™ i7 -8565U / i5-8265UE / i3-8145UE / Celeron-4305UE				Rockchip RK3368 Octa-core 1.5GHz (ARM Cortex-A53)			
	Memory	2 x DDR4 2400 / 2666MHz, Max. 32GB				DDR3L 2GB			
	Storage	1 x 2.5" HDD / SSD SATA3.0 drive bay (max. 7mm) 1 x M.2 2280 B+M Key (PCIw NVMe / SATA)				16GB eMMC onboard 1 x 2.5" HDD/SSD (max. 7mm)			
	Graphics	Intel® UHD Graphics				-			
	Operation System	Windows 10 64bit / Linux 64bit				Android 8.1			
DISPLAY AND TOUCH	LCD	11.6" LED	15.6" LED	21.5" LED	27.0" LED	11.6" LED	15.6" LED	21.5" LED	27.0" LED
	Resolution	1366 x 768 (HD)	1920 x 1080 (Full HD)	1920 x 1080 (Full HD)	1920 x 1080 (Full HD)	1366 x 768 (HD)	1920 x 1080 (Full HD)	1920 x 1080 (Full HD)	1920 x 1080 (Full HD)
	Screen Position	Landscape	Landscape	Portrait	Portrait	Landscape	Landscape	Portrait	Portrait
	Touch	True-Flat PCAP Multi Touch				True-Flat PCAP Multi Touch			
	Viewing Angle (H/V°)	45 (left), 45 (right), 20 (up), 40 (down)	85 (left), 85 (right), 85 (up), 85 (down)	89 (left), 89 (right), 89 (up), 89 (down)	89 (left), 89 (right), 89 (up), 89 (down)	45 (left), 45 (right), 20 (up), 40 (down)	85 (left), 85 (right), 85 (up), 85 (down)	89 (left), 89 (right), 89 (up), 89 (down)	89 (left), 89 (right), 89 (up), 89 (down)
	Brightness	250 cd/m2	220 cd/m2	300 cd/m2	300 cd/m2	250 cd/m2	220 cd/m2	300 cd/m2	300 cd/m2
	Contrast	500 : 1	800 : 1	3000 : 1	3000 : 1	500 : 1	800 : 1	3000 : 1	3000 : 1
	Backlight Lifetime	15,000hrs	15,000 hrs	30,000 hrs	30,000 hrs	15,000hrs	15,000 hrs	30,000 hrs	30,000 hrs
COMMUNICATION	Ethernet	1 x Intel® Gigabit LAN				1 x Realtek Gigabit LAN			
	Wireless	802.11a/b/g/n/ac + Bluetooth 5.0 with 2 external antenna				802.11b/g/n/ac + Bluetooth 5.0 with 2 external antenna			
I/O INTERFACE	USB	4 x USB3.2 Gen1 (Type A), 2 x USB2.0 (Type A)				8 x USB2.0 for USB Peripherals 1 x USB2.0 (OTG)			
	Serial Port	1 x RS232 (DB-9)				-			
	Audio	2 x Internal 2W speaker				2 x Internal 2W speaker			
PERIPHERALS	Camera	2MP FHD camera				2MP FHD camera			
	IC Card Reader	Friction Type User Card PC / SC 1.0 Standard Approval CPU card and Memory card compliant				Friction Type User Card PC/SC 1.0 Standard Approval CPU card and Memory card compliant			
	NFC/RFID Reader	EM compatible 64 bits, A SK Manchester coding or Mifare: ISO14443A standard				EM compatible 64 bits, A SK Manchester coding or Mifare: ISO14443A standard			
	Scanner	1D / 2D barcode scanner				1D/2D barcode scanner			
	Printer	-	3" thermal printer w/auto cutter, 200mm/sec			-	3" thermal printer w/auto cutter, 200mm/sec		
POWER	Adapter	19V / 4.74A 90W external adapter				19V / 4.74A 90W external adapter			
MECHANISM	Mounting	Counte-mount (Optional Stand), Pole-mount (Optional Stand), Wall-mount				Counte-mount (Optional Stand), Pole-mount (Optional Stand), Wall-mount			
	Counter Mount Dimension W/H/D	340 x 225 x 365 mm	435 x 315 x 472 mm	370 x 310 x 825 mm	470 x 370 x 893 mm	340 x 225 x 365 mm	435 x 315 x 472 mm	370 x 310 x 825 mm	470 x 370 x 893 mm
	Weight	11Kg	22kg	35kg	36kg	11Kg	22kg	35kg	36kg
ENVIRONMENT	Operating Temperature	0 ~ 35°C				0 ~ 35°C			
	Storage Temperature	-20°C ~ 60°C				-20°C ~ 60°C			
	Relative Humidity	20% - 80% RH (non-condensing)				20% - 80% RH (non-condensing)			

KIOSK

Optional Expansion Kit

Category	Item	Occupied Sections (Brackets)	EMBEDDED BOX PC							TOUCH PANEL PC						MEDICAL PANEL PC	KIOSK			
			BPCAL02	BPCAL03	BPCEL02	BPCEL03	BPCEL07	BPCWL02	BPCWL03	P21AL01	P21EL01	P21WL01	P15AL01	P15EL01	P15WL01	M21WL01	K11WL02	K15WL01	K21WL01	K27WL04
VIDEO OUTPUT	1x HDMI 2.0	1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1x DisplayPort	1	•	•	•	•	•	•	•	–	–	–	–	–	–	–	•	•	•	•
	1x DVI-I	1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1x VGA	1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
I/O INTERFACE	1x COM (RS232)	1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	2x COM (RS232/RS422/RS485)	2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	4x COM (RS232)	2	•	•	•	•	•	•	•	–	–	–	–	–	–	–	•	•	•	•
	6x COM (4x RS232 + 2x RS232/RS422/RS485)	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	•	•	•	•
	4x USB 2.0	1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1x DIO	1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1x Power Switch	1	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–
	1x DC-in	1	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	•	–	–
	2nd LAN module	-	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Dual LAN module (M.2)	1	•	•	•	•	•	•	•	–	–	–	–	–	–	–	•	•	•	•
NETWORK	WiFi module kit (RTL8821CE)	-	•	•	•	•	•	•	•	•	•	•	•	•	•	•	–	–	–	–
	WiFi antenna set	-	•	•	•	•	•	•	•	•	•	•	•	•	•	•	–	–	–	–
	4G/LTE connection module (M.2)	2	•	•	•	•	•	•	•	–	–	–	•	•	•	•	–	–	–	•
BOARD	Wide voltage range board (9~36V)	-	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	–	•
MOUNT KIT	VESA mount	-	•	•	•	•	•	•	•	•	•	•	•	•	•	•	–	–	–	–
	Ear mount	-	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–
	Din rail	-	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–
	Stand	-	–	–	–	–	–	–	–	•	•	•	•	•	•	•	–	–	–	–
OTHERS	Dummy bracket	1	•	•	•	•	•	•	•	–	–	–	•	•	•	–	–	–	–	–
	150W power adapter (Wide temp.)	-	•	–	•	–	–	•	–	–	–	–	–	–	–	–	–	–	–	–
	eDP cable (for 3rd video output)	-	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–
	External antenna back cover	-	–	–	–	–	–	–	–	•	•	•	•	•	•	•	–	–	–	–
	POAG	-	–	–	–	–	–	–	–	•	•	•	•	•	•	•	–	–	–	–