BPCWL03

BOX PC

PROCESSOR	Intel® Core™ i3-8145UE, Dual Core Intel® Core™ i7-8565U, Quad Core (optional)* Intel® Core™ i5-8265U, Quad Core (optional)* Intel® Core™ i7-8665UE, Quad Core (optional)* Intel® Core™ i5-8365UE, Quad Core (optional)* Intel® Celeron® 4305UE, Dual Core (optional)
MEMORY	2 x 260 pin DDR4 SODIMM 2400 MHz slots Supports dual channel up to 64GB (32GB x 2)
VIDEO GRAPHICS	Intel UHD graphics 610/620 (depending on processor)
DISPLAY	Supports up to three independent displays: 1) HDMI 1.4 on back panel 2) optional HDMI 1.4, DisplayPort 1.2 or DVI-I (DDI interface) 3) optional DisplayPort 1.2 or D-sub/VGA (eDP interface, limitations: no audio or PnP support)
AUDIO	Realtek ALC662, 2 channel HD audio
NETWORK	Intel Gigabit LAN x 2 Intel 802.11 a/b/g/n/ac + Bluetooth 5.0 (optional) External antenna x 2 (optional) Realtek 802.11 a/b/g/n/ac + Bluetooth 4.2 (optional) 10/100/1000 MB/s
TPM MODULE	Hardware Trusted Platform Module (Infineon SLB9670VQ2 TPM 2.0)
STORAGE INTERFACE	M.2 2280 M key x 1 (PCI-E NVMe / SATA)
PORTS	(2) RS232/RS422/RS485** (DB-9) (2) Gigabit LAN (RJ45, i211/i219LM) (1) RS232 (DB-9) (1) Audio line-out (1) HDMI 1.4 (1) MIC-in (4) USB 3.2 Gen 1 (Type A) (4) USB 2.0
IP RATING	IP30 compliant
OPERATING TEMPERATURE	0 - 40°C
STORAGE TEMPERATURE	-20°C - 60°C
RELATIVE HUMIDITY	20% - 80% RH (non-condensing)
MOUNTING	VESA mount 75 x 75 mm DIN rail (standard 35 mm) Ear mount 256 x 100 mm***
POWER	150W 19V/7.89A external adapter 9 - 36V support for DC input range is optional
DIMENSIONS	6.6 (L) x 9.6 (W) x 2.2 (H) inches
EMC	CE, FCC Class A, VCCI, RCM, BSMI****
SAFETY CERTIFICATION	CB, cTUVus, BSMI****
OTHER CERTIFICATIONS	RoHS, ErP, CEC
OS SUPPORT	Windows 10 64 bit, Linux 64 bit

*vPro only with i5/i7 options   **RS232 supports ring in 5V power (standard) / 12V power (specific optional board)

***Four M3x6L screws required to be screwed into chassis for this mounting   ****BSMI only for operating temperature of 0 - 40°C

   VESA bracket, Ear-Mount, and DIN-Rail clip are not included

For more information on all products, please contact us at **sales@us.shuttle.com** or **626.820.9000**

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Front View and Back View

1	RS232/RS422/RS485 x 2 (optional)	**3**	HDMI 1.4b (optional)
2	USB 2.0 x 4 (optional)		

A	Antenna fixture x 2	**F**	HDMI 1.4b
B	Headphone jack	**G**	RS232
C	Microphone-in	**H**	DC-in
D	Gigabit LAN x 2 (i211, i1219LM)	**I**	Power Button
E	USB 3.2 Gen 1 x 4		

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OPTIONAL DAUGHTER BOARDS

Four sections on the front panel supports optional expansion kits with daughter boards for I/O flexibility. Each expansion is required to start from section 1 to section 4 when installing.*

*See next page for list of optional expansion kits
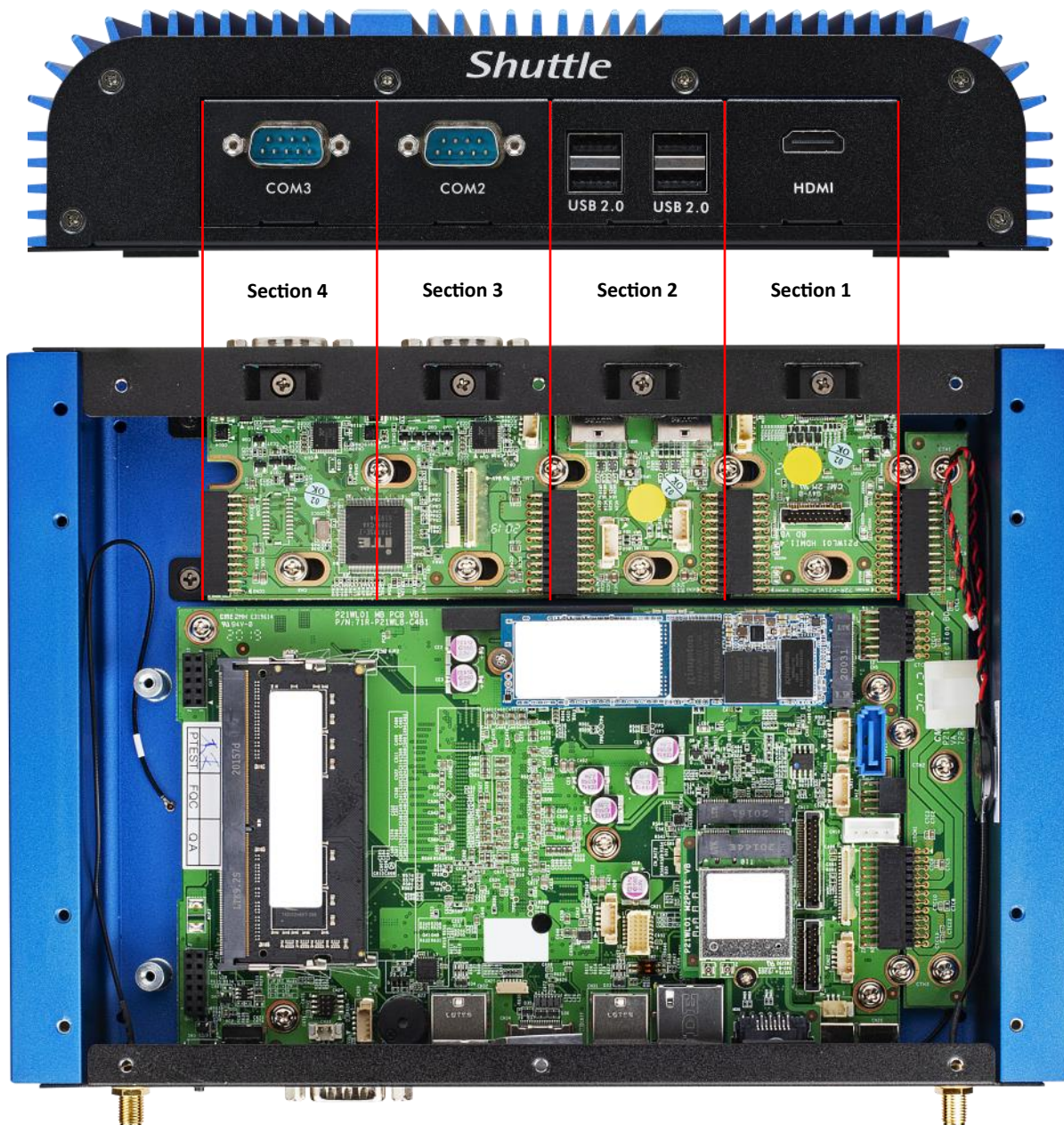
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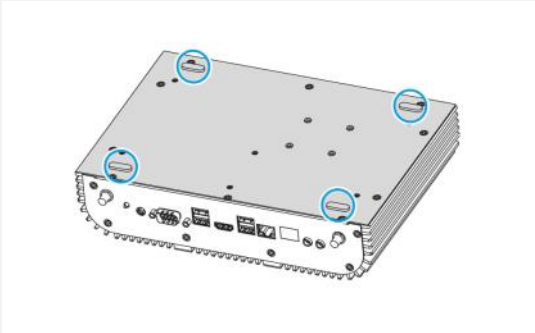
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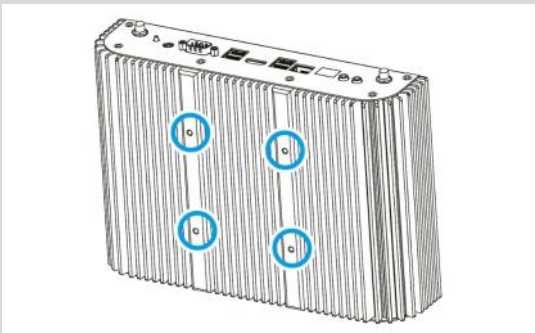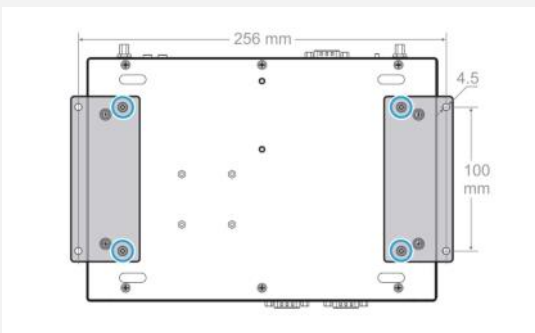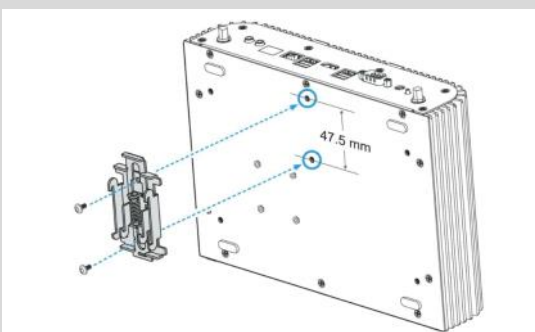
OPTIONAL EXPANSION KITS

PORT	IMAGE	OCCUPIED SECTIONS	MAXIMUM KITS	NOTE	
HDMI 1.4		1	1	DDI Interface	Mainboard provides two onboard connectors for optional expansion kits with graphics ports: -one 21-pin DDI interface -one 31-pin eDP interface* *eDP interface does not support audio and PnP
DVI-I		1	1	DDI Interface	
DISPLAYPORT 1.2		1	2	DDI or eDP Interface	
D-SUB/VGA		1	2	DDI or eDP interface	
USB 2.0 x 4		1	2 (4)	USB hub device: USB 2.0 ports allow up to 500mA/2.5W power output* *If only low power devices like a mouse/keyboard are connected, up to 4 USB kits can be used	
SINGLE COM		1	1	Supports RS232 only	
DUAL COM		2	1	Supports RS232/RS422/RS485	
WIDE RANGE DC-INPUT		-	1	DC-input supports 9-36V (instead of only 19V)	
WLAN + BT		-	1	Supports WLAN n/ac and Bluetooth 4.0	

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BOX PC

	REMARKS	IMAGE
HORIZONTAL	The PC can be operated in a horizontal position, standing on its rubber feet	
VESA MOUNTED	Four threaded M4 holes on the top allows for installation on walls or large displays (standard 75 x 75 mm VESA mount; VESA mount not included)	
EAR-MOUNTED	Four threaded M3 holes on the bottom allows for two Ear Mount brackets (optional accessory). The PC can be affixed to a surface with four screws (256 x 100 mm mounting dimensions)	
DIN-RAIL MOUNTED	Two threaded M3 holes on the bottom allows for installation on a standard 35 mm DIN-rail (DIN-Rail clip is not included)	

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CHASSIS	Aluminum and steel chassis Specially designed fins to maximize heat dissipation Dimensions: 6.6 (L) x 9.6 (W) x 2.2 (H) inches Weight: 6.3 LBS net (barebone without RAM/SSD and optional expansions)
POWER SUPPLY	External 150W power adapter (fanless) Input voltage: 100 - 240V AC, 50/60 Hz Output: 19V DC 7.89A max 150W AC mains cable: 3 pins, 1.8 m length, C5/C6 coupler for power adapter, CEE-7/7 plug w/ earth-contact (type E+F) for power outlet DC input connector: 5.5/2.5 mm (outer/inner diameter) (DC input voltage range can be optionally extended to support 9-36V)
OPERATING SYSTEM	The system comes without an operating system installed. Compatibility: Windows 10 64 bit, Linux 64 bit
PROCESSOR SUPPORT	8th Gen Intel Core ULV processor Whiskey Lake

Available Processors	Cores/Threads	Cache	Clock (Turbo)	vPro	Intel UHD Graphics
Intel Core i7-8665UE	4 / 8	8 MB	1.7 - 4.4 GHz	Yes	UHD 620, 300 - 1150 MHz
Intel Core i7-8565U	4 / 8	8 MB	1.8 - 4.6 GHz	-	UHD 620, 300 - 1150 MHz
Intel Core i5-8365UE	4 / 8	6 MB	1.6 - 4.1 GHz	Yes	UHD 620, 300 - 1050 MHz
Intel Core i5-8265U	4 / 8	6 MB	1.6 - 3.9 GHz	-	UHD 620, 300 - 1100 MHz
Intel Core i3-8145UE	2 / 4	4 MB	2.2 - 3.9 GHz	-	UHD 620, 300 - 1000 MHz
Intel Celeron 4305UE	2 / 2	2 MB	2.0 GHz	-	UHD 610, 300 - 1000 MHz

	Max supported processor power consumption (TDP): 15W Supports 64 bit, AES-NI, VT-x (EPT), VT-d, Enhanced SpeedStep, NX bit, SSE 4.1/4.2 System on chip architecture (SoC) with integrated memory and graphics controller
FANLESS COOLING	Passive heatpipe cooling, no fan noise at all Suitable for noise sensitive environments Fanless, dust-free and virtually maintenance free
MEMORY SUPPORT	2 x 260 pin SODIMM slots Supports DDR4 2400 (PC4-19200) SDRAM at 1.2V Supports Dual Channel mode Supports a max. of 32GB per DIMM, up to 64GB total Supports two unbuffered DIMM modules (no ECC or registered)
M.2 SLOT	M.2 2280 M slot provides the following interfaces: PCI-Express Gen 2.0 X1, SATA v3.0 (6 GB/s) interface Supports M.2 cards with a width of 22 mm and a length of 60 or 80 mm (type 2260/2280). Supports M.2 SATA SSDs (with BM key) and M.2 PCI-E SSDs (with M key) with auto detect.
AUDIO	Realtek® ALC662 audio codec, Digital multi-channel supported via HDMI and optional DisplayPort Two analog audio connectors (3.5 mm) on the bottom panel: 2 channel Line-out (headphones), Microphone input
WIRED NETWORK	Dual network with two RJ45 ports Supports 10/100/1000 MB/s operation, used network chips: 1) Intel i211 ethernet controller with MAC, PHY, PCIe interface 2) Intel i219LM PHY connected to the MAC of the processor Supports Wake on LAN (WOL), supports Teaming mode Supports network boot by Preboot eXecution Environment (PXE)
TPM MODULE	Hardware Trusted Platform Module (Infineon SLB9670VQ2 TPM 2.0)
24/7 NONSTOP OPERATION	Approved for 24/7 permanent operation Space around unit needed for circulation of air

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INTEGRATED GRAPHICS	Intel UHD 610/620 graphics (depends on processor) Supports up to three independent screens: -HDMI 1.4 on back panel -optional HDM 1.4, DisplayPort 1.2 or DVI-I (DDI interface) -optional DisplayPort 1.2 or D-sub/VGA (eDP interface, limitations: no audio or PnP support)
IP30 PROTECTED	The chassis is protected against tools and thick wires with protection class IP30
BIOS	AMI BIOS in EEPROM with SPI interface: -non-VPro (consumer) - SPI ROM size is 16 MB -vPro (corporate) - SPI ROM size is 32 MB Supports Firmware TPM (fTPM) v2.0 Supports Wake-on-LAN (WOL) Supports hardware monitoring and watch dog functionality Supports United Extensible Firmware Interface (UEFI) Supports boot from M.2 SSD cards and USB devices Supports Power on by RTC alarm Supports resume after power failure
OPTIONAL FRONT PANEL CONNECTORS	1) HDMI 1.4b, DisplayPort 1.2, or D-sub/VGA 4) RS232 COM port x 1 2) DisplayPort 1.2 (w/o audio) or D-sub/VGA 5) RS232/RS422/RS485 COM port x 2 (occupies two sections) 3) USB 2.0 x 4 (can be installed twice)
BACK PANEL CONNECTORS	HDMI 1.4b x 2 Microphone input (3.5 mm) USB 3.2 Gen 1 x 4 (Type A, max 5 GB/s) Headphones output (3.5 mm) Gigabit LAN (RJ45, i211/i219LM) x 2 DC input for external power adapter RS232 COM port x 1
OPTIONAL ACCESSORIES	1) Wide range DC-input 9 - 36 V* 3) WLAN 802.11 n/ac and BT 4.0 w/ two external antennas 2) Ear-mount brackets (256 x 100 mm)
OPERATING POSITIONS AND MOUNTING	1) Horizontal orientation -VESA mounting requires four M4 x 6L screws to be screwed 2) VESA mounting (75 x 75 mm) into chassis from the top 3) Ear-Mount using two optional 256 x 100 mm -Vertical mounting can be used for any orientation brackets (M4 x 6L screws x 4 required) -VESA bracket, Ear-Mount, and DIN-Rail clip are not included 4) DIN-Rail (standard 35mm) inside rack
ENVIRONMENTAL CRITERIA	Operating temperature: 0 - 40°C Humidity: 0 - 90% (non-condensing) Industrial grade temperature range: -20 - 60°C
CERTIFICATIONS	EMI: CE, FCC Class A, VCCI, RCM Other: RoHS, ErP, CEC Safety: CB, cTUVus This model is classed as a technical information equipment (ITE) in class A and is intended for use in living rooms and offices. The CE mark approves conformity by the EU directives: (1) 2014/30/EU relating to electromagnetic compatibility (EMC) (2) 2014/35/EU relating to Electrical Equipment designed for use within certain voltage limits (LVD) (3) 2009/125/EC relating to eco-design requirements for energy related products (ErP)

*DC input voltage range can be optionally extended to support 9-36V instead of only 19V

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BPCWL03

SUPPORTS 8TH GENERATION INTEL® PROCESSORS

The BPCWL03 supports Intel® 8th generation Core™ and Celeron® i3/i5/i7 processors, as well as commercial or embedded Whiskey Lake-U CPUs.*

*Processor options (i5/i7 UE processors support Intel vPro):

Intel® Core™ i3-8145UE, Dual Core   Intel® Core™ i7-8565U, Quad Core

Intel® Core™ i5-8265U, Quad Core   Intel® Core™ i7-8665UE, Quad Core

Intel® Core™ i5-8365UE, Quad Core   Intel® Celeron® 4305UE, Dual Core

CUSTOMIZABLE MOTHERBOARD

A modular motherboard provides I/O flexibility for diverse application needs. The front panel is divided into four sections to support optional daughter board expansion kits to expand the range of peripherals.

FANLESS DESIGN

With specially designed fins to maximize heat dissipation, a passive cooling system reduces power consumption required by a fan. The fanless design allows for quiet operation with low energy use and maintenance.

24/7 NONSTOP OPERATION

Officially approved for 24/7 nonstop operation, the BPCWL03 keeps things cool and stable for long term demands of applications with passive cooling.*

*Space around the unit is required for circulation of air

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ACCESSORY	PCL71
DESCRIPTION	The PCL71 is compatible with X50V4/X50V5/X50V6/X50V7 All-in-one PCs and can provide RS232/RS422/RS485 ports (supports 5V/12V) and one parallel (LPT) port on the back panel.
ITEMS INCLUDED	Circuit board x 1, screws x 4, ribbon cable x 1, multi-language quick installation guide
EXTERNAL PORT(S)	LPT x 1, COM1 (RS232/RS422/RS485) x 1, COM2 (RS232) x 1 Supports 0V/5V/12V

ACCESSORY	POS01
DESCRIPTION	The POS01 provides an additional RJ11 type DIO port (12V/24V) and four COM ports (RS232/RS422/RS485 x 1, RJ45 type RS232 x 1, RJ45 type RS232/RS422/RS485 x 1)
ITEMS INCLUDED	Printed Circuit Board (PCB), screws, power connector cable (4 pin), ribbon cable, quick guide
EXTERNAL PORT(S)	LPT x 1, COM1 (RS232/RS422/RS485 x 1), COM2 (RS232 x 1), COM RJ45 port x 2, DIO RJ11 port x 1
REMARKS	All COM ports are 5/12V compatible