

BPCAL03

BOX PC



PROCESSOR	Intel® Core™ i3-1215UE, Dual Core Intel® Core™ i5-1235U, Quad Core (optional)* Intel® Core™ i5-1245UE, Quad Core (optional)*	Intel® Core™ i7-1255U, Quad Core (optional)* Intel® Core™ i7-1265UE, Quad Core (optional)* Intel® Celeron® 7305E, Dual Core (optional)
MEMORY	2 x 262 pin DDR5 SODIMM 4800 MHz slots Supports dual channel up to 64GB (32GB x 2)	
VIDEO GRAPHICS	Intel UHD graphics (Core i3: Intel UHD, Core i5/i7: Intel Iris Xe)	
DISPLAY	Supports up to three independent displays: 1) HDMI 2.0b 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 ALC888s-VD 2-channel	
NETWORK	2 x Intel® 2.5G LAN External antenna x 2 (optional) 10/100/1000 MB/s/2.5GbE	Intel 802.11 a/b/g/n/ac + Bluetooth 5.0 (optional) Realtek 802.11 a/b/g/n/ac + Bluetooth 4.2 (optional)
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) (1) RS232 (DB-9) (1) HDMI 1.4 / HDMI 2.0B (Back Panel) (4) USB 3.2 Gen 2 (Type A)	(2) 2.5 Gbps LAN (RJ45, i211/i219LM) (1) Audio line-out (1) MIC-in (4) USB 2.0
IP RATING	IP30 compliant	
OPERATING TEMPERATURE	-20°C - 60°C	
STORAGE TEMPERATURE	-20°C - 60°C	
RELATIVE HUMIDITY	20% - 80% RH (non-condensing)	
MOUNTING	VESA mount 75 x 75 mm Ear mount 256 x 100 mm***	DIN rail (standard 35 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 / 11 IoT 64bit, 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**

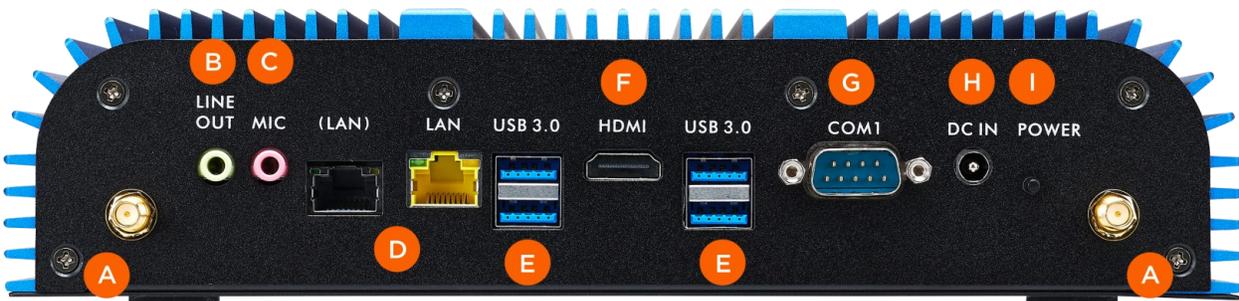
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Front View and Back View



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



- A Antenna fixture x 2
- B Headphone jack
- C Microphone-in
- D 2.5 Gbps LAN x 2
- E USB 3.2 Gen 1 x 4
- F HDMI 2.0b
- G RS232
- H DC-in
- I Power Button

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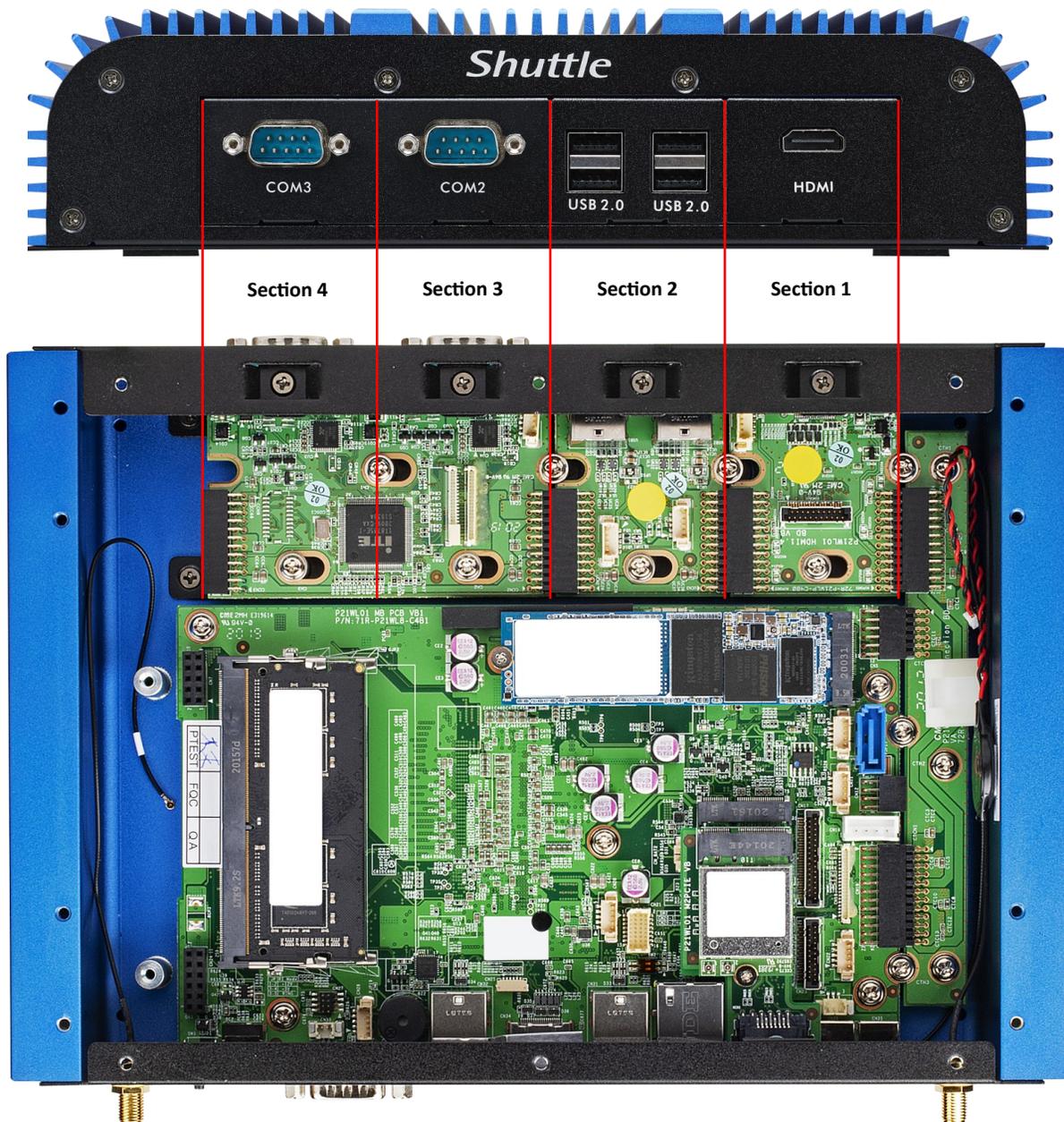
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OPTIONAL DAUGHTER BOARDS

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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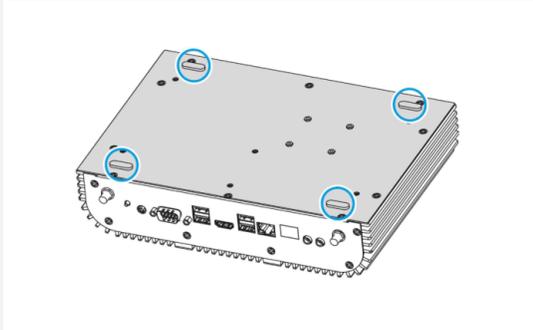
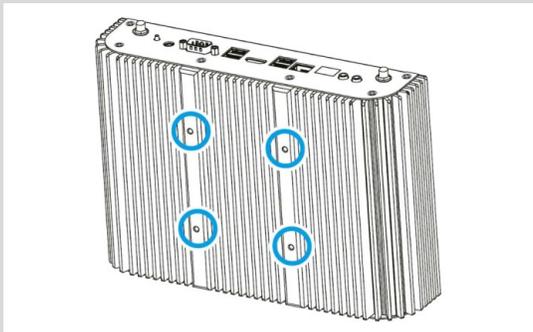
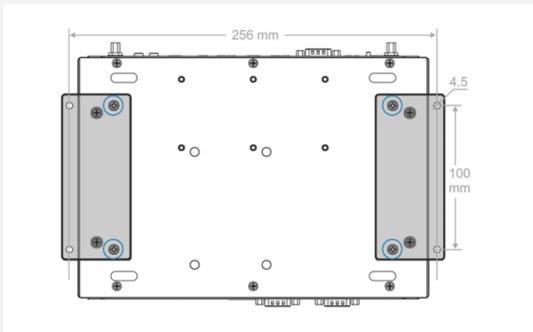
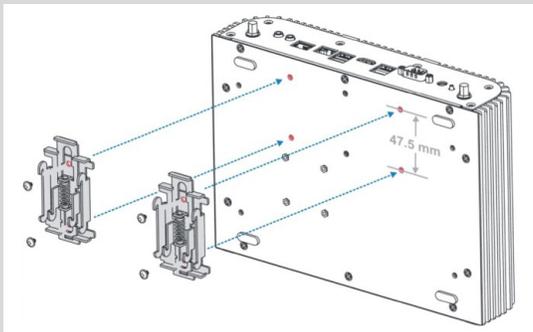
OPTIONAL EXPANSION KITS

PORT	IMAGE	OCCUPIED SECTIONS	MAXIMUM KITS	NOTE
HDMI		1	1	-One HDMI 2.0b is in the back panel -Three additional graphic ports can be added: HDMI 2.0b, HDMI 1.4, DisplayPort 1.2, DVI-I or VGA The fourth port is limited to DisplayPort or VGA and is not Plug&Play capable
DVI-I		1	1	
DISPLAYPORT		1	1	
D-SUB/VGA		1	1	
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-INPU		-	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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	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	Four threaded M3 holes on the bottom allows for installation of two clips to mount on a standard 35 mm DIN-rail (DIN-Rail clip is not included)	

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CHASSIS	<p>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)</p>
POWER SUPPLY	<p>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)</p>
OPERATING SYSTEM	<p>The system comes without an operating system installed. Compatibility: Windows 10/11 64 bit, Linux 64 bit</p>
PROCESSOR SUPPORT	<p>12th Gen. Intel® Alder Lake Core Series 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</p>
FANLESS COOLING	<p>Passive heatpipe cooling, no fan noise at all Suitable for noise sensitive environments Fanless, dust-free and virtually maintenance free</p>
MEMORY SUPPORT	<p>2 x 262 pin SODIMM slots Supports DDR5 4800 SDRAM Supports Dual Channel mode Supports a max. of 32GB per DIMM, up to 64GB total Supports two unbuffered DIMM modules (no ECC or registered)</p>
M.2 SLOT	<p>M.2 2280 M slot provides the following interfaces: PCI-Express Gen 4.0 X4, SATA v3.0 (6 GB/s) interface</p> <p>Supports M.2 cards with a width of 22 mm and a length of 42 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.</p>
AUDIO	<p>Realtek ALC888s-VD 2-channel Two analog audio connectors (3.5 mm) on the bottom panel: 2 channel Line-out (headphones), Microphone input</p>
WIRED NETWORK	<p>Dual network with two RJ45 ports Supports 10/100/1000 MB/s, 2.5GbE operation, used network chips: 1) Intel i226 ethernet controller with MAC, PHY, PCIe interface 2) Intel i226 PHY connected to the MAC of the processor Supports Wake on LAN (WOL), supports Teaming mode Supports network boot by Preboot eXecution Environment (PXE)</p>
TPM MODULE	<p>Hardware Trusted Platform Module (Infineon SLB9670VQ2 TPM 2.0)</p>
24/7 NONSTOP OPERATION	<p>Approved for 24/7 permanent operation Space around unit needed for circulation of air</p>

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INTEGRATED GRAPHICS	Intel UHD graphics (Core i5/i7: Intel Iris Xe) Supports up to three independent screens: -HDMI 2.0b 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 2) DisplayPort 1.2 (w/o audio) or D-sub/VGA 3) USB 2.0 x 4 (can be installed twice)	4) RS232 COM port x 1 5) RS232/RS422/RS485 COM port x 2 (occupies two sections)
BACK PANEL CONNECTORS	HDMI 2.0b x 1 USB 3.2 Gen 2 x 4 (Type A, max 5 GB/s) Gigabit LAN (RJ45, i226/i226) x 2 RS232 COM port x 1	Microphone input (3.5 mm) Headphones output (3.5 mm) DC input for external power adapter
OPTIONAL ACCESSORIES	1) Wide range DC-input 9 - 36 V* 2) Ear-mount brackets (256 x 100 mm)	3) WLAN 802.11 n/ac and BT 4.0 w/ two external antennas
OPERATING POSITIONS AND MOUNTING	1) Horizontal orientation 2) VESA mounting (75 x 75 mm) 3) Ear-Mount using two optional 256 x 100 mm brackets (M4 x 6L screws x 4 required) 4) DIN-Rail (standard 35mm) inside rack	-VESA mounting requires four M4 x 6L screws to be screwed into chassis from the top -Vertical mounting can be used for any orientation -VESA bracket, Ear-Mount, and DIN-Rail clip are not included
ENVIRONMENTAL CRITERIA	Operating temperature: 0 - 40°C Industrial grade temperature range: -20 - 60°C	Humidity: 0 - 90% (non-condensing)
CERTIFICATIONS	EMI: CE, FCC Class A, VCCI, RCM Safety: CB, cTUVus	Other: RoHS, ErP, CEC
	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

BIOS DOWNLOADS: <https://global.shuttle.com/products/productsDownload?pn=BPCAL02%20/%2003&c=box-pc>

FAQ LIST: <http://global.shuttle.com/support/faq>

PRODUCT WARRANTY: <https://us.shuttle.com/barebone-support/policy-xpc-barebone/>

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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 BPCAL03 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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