

SYSTEM

XPC all-in-one

IOT X5090PA Black

8 GB RAM + 120 GB M.2 SSD + Win10

15.6" ALL-IN-ONE PC FOR POS, POI AND KIOSK APPLICATIONS

The Shuttle IOT X5090PA is a fully-configured 15.6-inch AIO system with RAM and M.2 SSD and Windows 10 IoT operating system. It is powered by a Gen12 Intel ULV processor. The modern processor architecture helps improve on power consumption and computing power. Thanks to its passive heatpipe cooling, the system is virtually noiseless, maintenance-free and approved for 24/7 nonstop operation. This AIO-PC offers plenty of connections: HDMI, VGA, 6x USB, Gigabit LAN, 2x COM and 2x Audio. Particularly suitable for vertical applications is the arrangement of connectors at the bottom and the IP54 compliant front panel which is dust-protected and protected from splashing of water.



COMMON FEATURES

- IP54 compliant front panel
- Dimensions: 391 x 327 x 42 mm (WH/D)
- Supports 24/7 Nonstop Operation
- 100 mm VESA mount capable
- Operating temperature: 0~40 °C
- Fanless heatpipe cooling system

DISPLAY & GRAPHICS

- 39.6 cm (15.6") LC Display, 1366 x 768 pixel resolution
- Resistive touchscreen
- Integrated Intel UHD graphics
- HDMI 2.0b & VGA

OPERATING SYSTEM

- Windows 10 IoT LTSC (64-bit)

PROCESSOR

- Intel Celeron 7305 SoC, 1x P-Core, 4x E-Core, 8 MB Cache
- Intel Generation 12 "Alder Lake-U" TDP: 15W

STORAGE

- 8 GB DDR5-4800 SO-DIMM RAM
- 120 GB M.2 SSD supports NVMe
- Freier M.2-2280-Steckplatz unterstützt SSD-Karten mit SATA
- Supports one 2.5" SATA drive (hard disk or SSD)
- Supports internal USB stick (USB 2.0, type A)

CONNECTIVITY

- HDMI 2.0b
- D-Sub/VGA
- 2x USB 3.2 Gen 2 (max. 10 Mbps, red)
- 4x USB 3.2 Gen 1 (max. 5 Mbps, blue)
- internal: 1x USB 2.0 (Type A)
- Gigabit LAN (Intel)
- 2x Audio (Mic & headphones)
- 2x COM-Port (1x RS232, 1x RS232/422/485)
- Power button
- Clear CMOS button
- Power LED and HDD LED
- DC Input

BUILT-IN

- 2.0 Megapixel FHD webcam
- Electret Condenser Microphone
- 2x 2 W speakers
- Wi-Fi 5 Wireless Network with two internal Antennas (supports WLAN 802.11ac and Bluetooth 4.2)

POWER SUPPLY

- External 90 W / 19 V power adapter (DC-in supports 12 or 19 V)

MODELS OF THE X50V9 SERIES

Category	Product	Intel ULV CPU	Operating System	DDR5 RAM	M.2 SSD	Colour	UPC/EAN bar code
Barebone	X50V9	Celeron 7305 (Gen 12)	—	—	—	Black	887993006802
						White	887993006819
	X50V9U3	Core i3-1315U (Gen 13)	—	—	—	Black	887993006215
						White	887993006222
System	POS X509	Celeron 7305 (Gen 12)	—	8 GB		Black	4046047104185
						White	4046047104192
	IOT X5090PA	Celeron 7305 (Gen 12)	Win10 IoT LTSC	8 GB		Black	4046047104178



PRODUCT FEATURES



All applications at your fingertips

The innovative touchscreen technology delivers the simplest operation possible and makes the screen the centre of action. Its high-quality design lets you control the whole range of multimedia - music, movies, video playback and web browsers start by just touching the screen.



24/7 nonstop operation

The Shuttle XPC all-in-one IOT X5090PA is officially approved for 24/7 permanent operation. Thanks to its low power consumption and completely passive cooling, this PC runs highly reliable making it perfectly suitable for digital signage and POI/POS applications.



Fanless and quiet

The Shuttle XPC all-in-one IOT X5090PA uses a passive thermal module to lead heat out of the case quickly and evenly. The unique fanless design makes it perfect to be used in noise-sensitive environments. As an additional benefit, fanless cases rarely gather dust on the inside and stay cleaner than others. So it's not only quiet and low in energy use, but also virtually maintenance-free.



Protection Class IP54

The front panel of the Shuttle XPC all-in-one IOT X5090PA is dust-protected and protected from splashing of water according to IP protection class 54. Consequently, this All-in-One PC can be used for those indoor applications, where the touchscreen may be exposed to humidity and occasional splashing of water. This is particularly welcome in restaurants, laboratories, production or other places.



Optimised Cable Management

Most of the connectors are now located at the back panel facing down. This leads to an effective cable management making for a clean, tidy appearance on the desk. On the left side sit those connectors which need to be accessed from the front: the power button and two USB ports.



Connects up to two displays

The Shuttle XPC all-in-one IOT X5090PA features two video outputs: one analog D-Sub/VGA connector and one HDMI 2.0b connector, which even supports UHD/4K resolution. Two separate displays can be connected in extended mode. Now add the built-in display of the IOT X5090PA and there are three displays showing different content.



Hidden Power Button

The power button can be deactivated by Jumper JP1 to prevent unauthorised use. Still, it can be used with a straightened paper clip (see photo). A hidden Clear CMOS is also available in order to reset the BIOS settings.



VESA mount *)

The stand on the rear can easily be removed to unveil four VESA mounting screw holes that can be used for mounting arms and other mounting devices from a variety of manufacturers.

*) VESA mount is not included



Black and White versions available

Choose the right colour for your application. As a rule, black is preferred for use in the office, as a POS system in retail or as a control unit in manufacturing. The white version is often used in the health sector, in the kitchen area or as a POS system in the cosmetics/massage studio.

Front and Back Panel



- | | | |
|---|---------------------------------------|-------------------------------------|
| 1. Stand | 8. Power button | 18. D-Sub/VGA video output |
| (a) Stand mounting plate | 9. Hole for hidden power button | 19. DC-input for power adapter |
| (b) VESA cover | 10. 4x USB 3.2 Gen 1 (5 Gbps, blue) | 20. HDMI 2.0b video output |
| (c) 100 x 100 mm VESA mount | 11. Hole for hidden Clear CMOS button | 21. RJ45 network port (LAN) |
| 2. 4x Perforation for external antennas | 12. Power LED | 22. 2x USB 3.2 Gen 2 (10 Gbps, red) |
| 3. Full HD Webcam | 13. Hard disk LED | 23. Audio Line-out (headphones) |
| 4. Microphone | 14. Openings for ventilation | 24. Microphone input |
| 5. Touchscreen LC-display | 15. Name plate (rating label) | |
| 6. 2x speakers (stereo) | 16. Hole for Kensington lock | |
| 7. Stylus with holder | 17. 2x D-Sub COM port | |

Range of Applications (Examples)

Digital Signage
Visual advertising,
Info Terminal



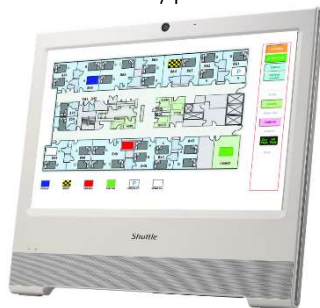
POS
Checkout system in Retail Stores,
Restaurants, Hotels



POS Radio
Playing advertising
and music



Call System
e.g. for nurses (hospital)
or security personnel



Smart Home Control
Surveillance,
Home Automation



Device Control
e.g. for copy machines



Device Control
e.g. for health services or fitness
equipment



Communication Device
e.g. for the elderly



Visualisation
e.g. for industrial production machines



On a boat
e.g. for navigation and entertainment



Data Collector
e.g. Recording of
working hours



Entertainment
e.g. at the dentist or
in the waiting room



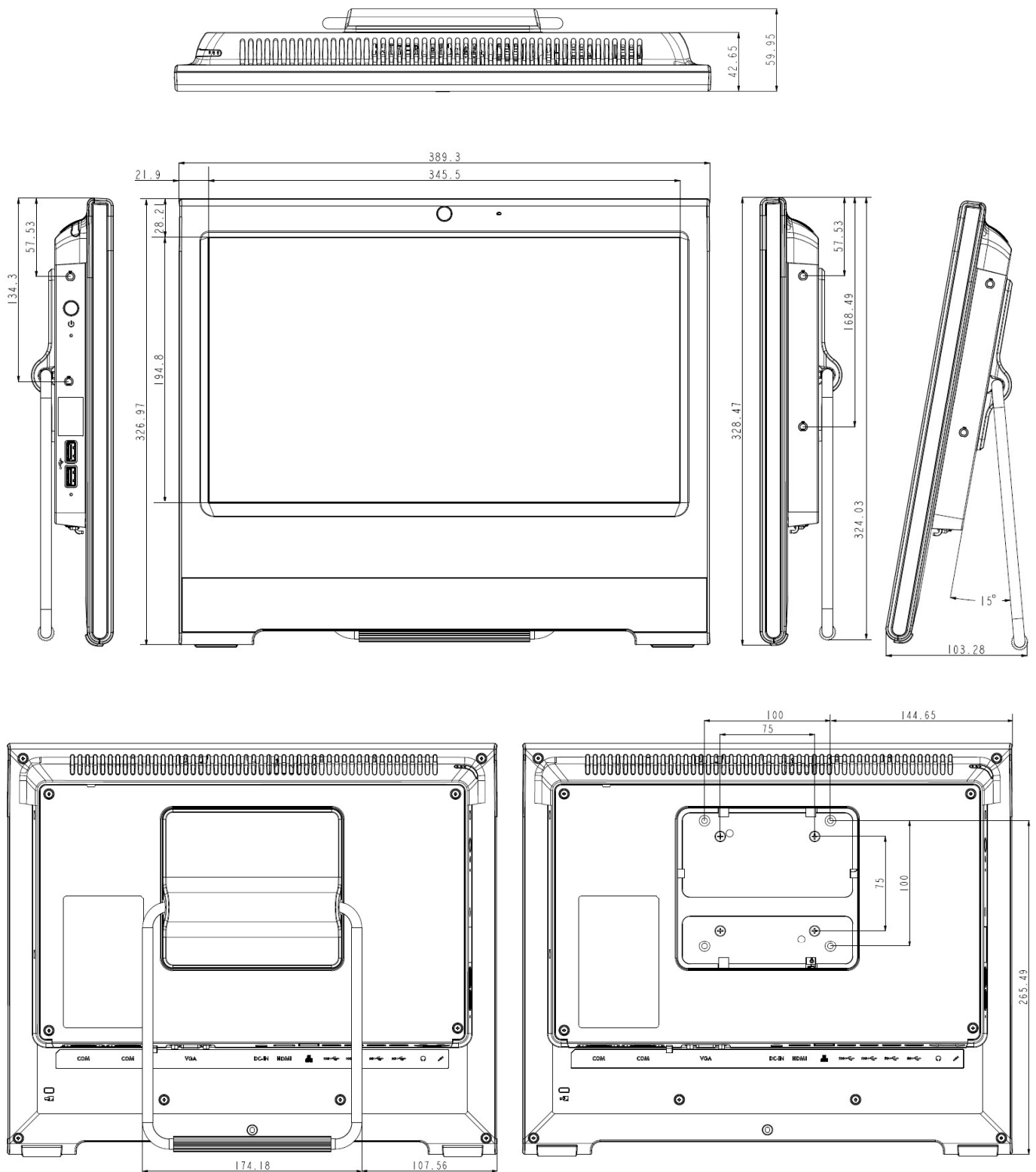
SHUTTLE XPC all-in-one SYSTEM IOT X5090PA Black – SPECIFICATIONS

FANLESS AND SILENT	<p>Passive heatpipe cooling, no fan noise at all</p> <p>Perfect to be used in noise-sensitive environments</p> <p>Fanless, dust-free and thus virtually maintenance-free</p>
24/7 NONSTOP OPERATION	<p>This device is approved for 24/7 permanent operation.</p> <p>Requirements:</p> <ul style="list-style-type: none"> - Free circulation of air amongst the PC must be guaranteed. - Ventilation holes must be kept clear. - If a hard disk is installed, this must also be approved for permanent operation by its manufacturer.
IP54 PROTECTED	<p>The front panel is dust-protected and protected from splashing of water according to protection class IP54.</p>
CHASSIS	<p>Colour: black</p> <p>Dimensions: 391 x 327 x 42 mm (W x H x D)</p> <p>100mm VESA mount capable</p> <p>Mounting hole for Kensington lock</p> <p>Weight: 3.5 kg net, 4.2 kg gross</p>
OPERATING SYSTEM	<p>Windows 10 IoT LTSC - 64-Bit</p>
TOUCHSCREEN	<p>Touchscreen function supports fingertip input</p> <p>Resistive 5-wire single-touch technology</p> <p>Stylus for the built-in touchscreen</p>
15.6" DISPLAY	<p>39.6 cm / 15.6" LC-display, ratio: 16:9 wide-screen panel</p> <p>Resolution: 1366 x 768 = 1.05 Megapixel</p> <p>Backlight unit: High power LED, Luminance: 220 cd/sqm</p> <p>Glass thickness: 3.2 mm</p>
PROCESSOR	<p>Model: Intel Celeron 7305</p> <p>Code name: Alder Lake-U (12th generation Intel Core)</p> <p>Performance-cores (P-Cores): 1 core (1 thread), clock rate: 1.1 GHz</p> <p>Efficient-cores (E-Cores): 4 cores (4 threads), clock rate: 0.9 GHz</p> <p>Smart-Cache (L3): 8 MB</p> <p>Base Power (PL1 TDP): max. 15 W</p> <p>Maximum Tjunction Temperature: 100 °C</p> <p>System-on-a-chip architecture (SoC) with integrated memory and graphics controller</p> <p>BGA1700 package - directly soldered onto the mainboard</p> <p>Lithography: Intel 7 process (10 nm Enhanced SuperFin)</p>
INTEGRATED GRAPHICS	<p>Intel UHD Graphics</p> <p>GPU clock frequency: max. 1100 MHz</p> <p>Execution Units (EUs): 48</p>
SUPPORTS TRIPLE DISPLAY	<p>Up to three displays simultaneously</p> <p>Two video ports support two additional independent screens:</p> <ol style="list-style-type: none"> 1) HDMI 2.0b digital audio/video port supports up to 3840 x 2160 pixels resolution at 60 Hz refresh rate (2160p60) 2) VGA / D-Sub analog video port supports 1920 x 1080 pixels resolution at 60 Hz refresh rate (1080p60) <p>Special conditions for operation in Multi-Monitor mode:</p> <ol style="list-style-type: none"> 1) Clone mode: all displays show the same content at 1366x768 resolution 2) Extended mode: all displays show different content
BIOS	<p>AMI BIOS in 32 MByte EEPROM with SPI interface</p> <p>Supports Power fail resume / always on</p> <p>Supports Wake-on-LAN (WOL) from S3, S4, S5 ACPI states</p> <p>Supports hardware monitoring and Watchdog functionality</p> <p>Supports Firmware TPM v2.0 functionality</p>
MEMORY (RAM)	<p>8 GB DDR5-4800 (PC5-38400) SDRAM at 1.1 V</p> <p>Supports a maximum of 32 GB per DIMM, maximum total size: 64 GB</p>
M.2 SSD CARD	<p>120 GB M.2-2280 SSD card with PCIe/NVMe interface</p> <p>A second M.2 SSD card with SATA interface can be installed</p>
2.5" BAY FOR HDD/SSD	<p>Supports one SATA hard disk or one SATA SSD drive in 6.35 cm / 2.5" format</p> <p>The SATA 3.0 interface supports up to 600MB/s data transfer speed (6 Gbit/s)</p> <p>Supports one drive with up to 9.5 mm in height</p> <p>SATA data/power cable pre-installed</p>

WEBCAM	Integrated Full HD webcam (1920 x 1080 pixels)
MICROPHONE AND SPEAKERS	Front panel with integrated Electret Condenser Microphone and 2x 2 W speakers
INTEGRATED AUDIO	Realtek ALC888S (HD-Audio) Two analog audio connectors (3.5 mm) on the bottom side: 1) Line-out (head-phones) 2) Microphone input Digital Audio is supported via the HDMI output.
WIRED NETWORK	Intel i219 Ethernet Controller Supports 10 / 100 / 1.000 MBit/s operation Supports WAKE ON LAN (WOL) from S3, S4 modes Supports network boot by Preboot eXecution Environment (PXE)
WIRELESS NETWORK (WLAN)	WLAN controller Card: Realtek RTL8821CE WLAN antennas: two internal antennas Supports WiFi IEEE 802.11b/g/n/ac on the 2.4 / 5 GHz band, 1T1R Supports 20 / 40 / 80 MHz channel bandwidth Security: supports WPA(-PSK), WPA2(-PSK), WEP 64/128 bit, IEEE 802.11x, IEEE 802.11i Supports Bluetooth 4.2 on the 2.4 GHz band The M.2-2230 Key A+E slot supports PCIe Gen3 x1, USB 2.0 und CNVi
FRONT LEDS	Power LED (blue) HDD/SSD LED (orange)
CONNECTORS LEFT SIDE	Power button Hole with hidden power button (onboard micro switch) Hole with hidden Clear CMOS button (onboard micro switch) 2x USB 3.2 Gen 1 (max. 5 Gbps, blue)
CONNECTORS BOTTOM SIDE	HDMI 2.0b (supports digital video and digital audio) VGA connector (D-Sub 15 pol., analog video) 2x USB 3.2 Gen 2 (max. 10 Gbps, red) 2x USB 3.2 Gen 1 (max. 5 Gbps, blue) Gigabit Network (LAN, RJ45, Intel i219) Audio Line-out / head-phones (3.5 mm jack) Microphone input (3.5 mm jack) DC input for external power adapter (5.5 / 2.5 mm) 2x COM/serial D-Sub (1x RS232, 1x RS232/422/485)
CONNECTORS ONBOARD	Internal USB 2.0 type A connector for a USB stick Serial ATA (6 Gbps) data/power connector 2x serial interfaces for COM ports (each 2x5-pin, 2 mm pitch) Other available connectors are occupied by integrated components.
OPTIONAL ANTENNAS	Opening holes for four optional antennas: The chassis features four perforated 6.5 mm holes for optional antennas mounted with an (RP-)SMA connector for wireless network such as WLAN or WWAN (e.g. 4G/5G) (see section "Optional Accessories")
POWER ADAPTER	External 90 W power adapter (fanless) Input: 100~240 V AC, 50/60 Hz, max. 1.6 A Output: 19 V DC, max. 4.74 A, max. 90 W DC cable length: ca. 170 cm AC cable length: ca. 170 cm (3-pin Micky MM C6 and Schuko earthed safety plug)
DC INPUT CONNECTOR	DC Input Connector: 5.5 / 2.5 mm (outer/inner diameter) The DC-input of the computer supports an external power source with either 12V±5% or 19V±5%.
SUPPLIED ACCESSORIES	Multilingual Quick Guide Driver DVD for Windows External Power Adapter (90W / 19V) AC Power cord with protective-earth contacts 2x Thermal Pads for SSD M.2 cards: 70 x 20 x 5.25 mm 2x Thermal Pads for RAM modules: 50 x 15 x 2.25 mm and 70 x 20 x 4 mm 3x silver screws M3x4 for mounting M.2 SSD cards 4x black screws M3x4 for mounting a 2.5" SATA drive

<p>OPTIONAL ACCESSORIES</p>	<p>1) WLAN kit WLN-M1 (Intel AX200 card + two external antennas) An 802.11ac (1T1R) WLAN function with internal antennas is already pre-installed and can be upgraded to 802.11ax (2T2R) with two external antennas with this kit.</p> <p>2) 4G/5G kit WWN04 This kit includes an adapter board for the lower M.2-2280 slot (CN5) and four external antennas. For data transmission in the mobile network, the these additional components are required - a 4G/LTE card in M.2-3042 format or a 5G card in M.2-3052 format - an activated nano SIM card</p>
<p>ENVIRONMENTAL SPECIFICATIONS</p>	<p>Operating temperature: 0~40 °C Humidity: 10~90 %, non-condensing</p>
<p>CERTIFICATIONS / COMPLIANCE</p>	<p>EMI: CE, UKCA, FCC, BSMI, RCM, VCCI Safety: CB (IEC 60950/62368), cTUVus (UL 62368), BSMI Other compliances: RoHS, ErP Lot3, Energy Star v8.0</p>
<p>CONFORMITY</p>	<p>This device is classed as a technical information equipment (ITE) in class B and is intended for use in living room and office. The CE-mark approves the 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), (4) 2014/53/EU Radio Equipment Directive (RED)</p>

IOT X5090PA Series – Technical Drawings



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