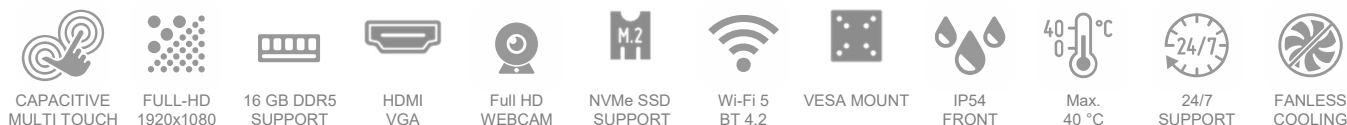


BAREBONE XPC all-in-one P56N Black



COMMON FEATURES

- IP54 compliant front panel ■ Dimensions: 394 x 273 x 40 mm (WHD)
- Weight: 3.31 kg net, 4.55 kg gross ■ 100 mm VESA mount capable
- Supports 24/7 Nonstop Operation ■ Fanless cooling system
- Operating temperature: 0~40 °C

DISPLAY & GRAPHICS

- 39.6 cm (15.6") LC Display, 1920x1080 pixel ■ Capacitive 10-point multi-touch
- Integrated Intel UHD graphics ■ HDMI 2.0b & VGA

OPERATING SYSTEM

- An operating system is not included
- Supports Windows 11 (64-bit) and Linux (64-bit)

PROCESSOR

- Intel N150 SoC processor, 4 Cores, max. 3.6 GHz, 6 MB Cache, TDP: 6W
- Code name "Twin Lake" ■ Intel 7 (10 nm) process

RAM Memory

- 1x 262-pin SO-DIMM slot
- Supports max. 16 GB DDR5-4800 (or higher clock rating)

M.2 SLOT FOR SSD CARD

- M.2-2280 M-key slot supports one SSD card (PCIe/NVMe or SATA)

CONNECTIVITY

- HDMI 2.0b ■ D-Sub/VGA ■ 2x USB 3.2 Gen 2 ■ 4x USB 3.2 Gen 1
- 2x Serial COM ports (RS232) ■ 2.5G LAN (Intel i226LM)
- 2x Audio (for microphone & headphones)

BUILT-IN

- 2.0 Megapixel FHD webcam ■ 2x 2 W speakers ■ Electret Condenser Microphone
- WLAN-ac (Wi-Fi 5, RTL8821CE) with two internal antennas

POWER SUPPLY

- External 65W / 19V power adapter ■ DC-input supports 12V and 19V

OPTIONAL ACCESSORIES

- **WLN-M12**: WLAN kit (Intel AX210, WiFi-6E) with two external antennas
- **POV21**: Robust Dual VESA Stand for one or two AIO PCs / Displays



MODELS OF THE P55U/P56N SERIES

Product	Intel Processor	Intel Generation	P-Cores / Threads	E-Cores / Threads	L3 Cache	max. RAM supported	Graphics clock max.	EUs	UPC Code
P55U	Celeron 7305	Gen 12	1 / 1	4 / 4	8 MB	2x 32 GB DDR5-4800	1100 MHz	48	887993007113
P55U3	Core i3-1315U	Gen 13	2 / 4	4 / 4	10 MB	2x 48 GB DDR5-5200	1250 MHz	64	887993007120
P56N	Intel N150	Twin Lake	—	4 / 4	6 MB	1x 16 GB DDR-4800	1000 MHz	24	887993009872

PRODUCT FEATURES



All applications at your fingertips - 10-point multi-touch

The innovative touchscreen technology delivers the simplest operation possible and makes the screen the centre of action. Its high-quality design gives you access to all capabilities of the PC - by just touching the screen.



24/7 nonstop operation

The Shuttle XPC all-in-one P56N 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.

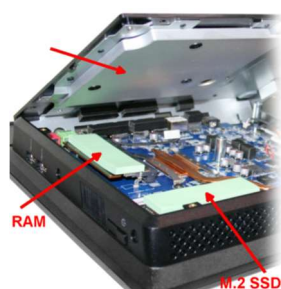
Conditions for permanent use:

- Ambient temperature while under load: 5 - 40 °C
- Air humidity while under load: 10 - 80 % (not condensing)
- Free circulation of air amongst the PC must be guaranteed
- Ventilation holes must be kept clear



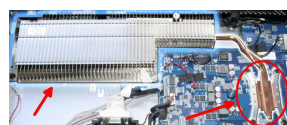
Fanless and quiet

The Shuttle XPC all-in-one P56N 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.



Huge heat sink for the M.2 SSD card

The package includes two thermal pads for the RAM module and the M.2 SSD card. A solid heat sink is mounted on the inside of the case cover, which comes into contact with the thermal pads after installation. This sophisticated cooling system is particularly important for modern M.2 SSD cards to prevent overheating in this fanless system.



Heat from the processor is transferred via an efficient heat pipe to numerous cooling fins



Protection Class IP54

The front panel of the Shuttle XPC all-in-one P56N 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 two USB connectors which need to be accessed from the front.



Connects up to two external displays

The Shuttle XPC all-in-one P56N features two video outputs: One analog D-Sub/VGA connector and one HDMI 2.0 connector. Two separate displays can be connected in extended mode. Now add the built-in display of the P56N and there are three displays showing different content.



VESA mount *)

The stand on the rear can easily be removed to unveil four VESA mounting screw holes (100 x 100 mm) that can be used for mounting arms and other mounting devices from a variety of manufacturers.

*) VESA mount is not included.



If you need a massive stand that can be secured in place and with integrated cable management, Shuttle recommends the optional stand POV21.

Front and Back Panel



- | | | |
|--|-----------------------------------|-------------------------------------|
| 1. 4x Perforation for external antenna | 7. Hole with Clear CMOS button | 16. DC-input for power adapter |
| 2. 2x speakers (stereo) | 8. Microphone | 17. HDMI video output |
| 3. Hole for Kensington lock | 9. Full HD Webcam | 18. RJ45 Gigabit LAN port |
| 4. Stand | 10. LED indicates Webcam activity | 19. 2x USB 3.2 Gen 1 (5 Gbps, blue) |
| (a) Stand mounting plate | 11. Touchscreen LCD display | 20. Audio Line-out (headphones) |
| (b) VESA cover | 12. Power LED | 21. Microphone input |
| (c) 100 x 100 mm VESA mount | 13. Hard disk LED | 22. Rubber feet |
| 5. Power button | 14. 2x COM ports (Sub-D) | |
| 6. 2x USB 3.2 Gen 1 (10 Gbps, red) | 15. D-Sub/VGA video output | |

Shuttle Product Comparison: P56N versus predecessors

MODEL	P56N	P55U Series	P52U Series
Processor	Intel N150, TDP=6W Codename: "Twin Lake-N"	Intel Core Gen 12/13, TDP=15W Codename: "Alder/Raptor Lake-U" P55U : Celeron 7305 P55U3 : Core i3-1315U	Intel Core Gen 10, TDP=15W Codename: "Comet Lake-U" P52U : Celeron 5205U P52U3 : Core i3-10110U
Operating System Support	Windows 11 – 64-bit Linux – 64-bit	Windows 11 – 64-bit Windows 10 – 64-bit Linux – 64-bit	Windows 11 – 64-bit Windows 10 – 64-bit Linux – 64-bit
RAM memory (max.)	Supports 1x DDR5 SO-DIMM modules max. 1x 16GB DDR5-4800	Supports 2x DDR5 SO-DIMM modules P55U : max. 2x 32GB DDR5-4800 P55U3 : max. 2x 48GB DDR5-5200	Max. 2x 32 GB SO-DIMM Celeron: DDR4-2400 Core i3: DDR4-2666
M.2 Slot	M.2-2280 slot for M.2-SSD supports PCIe X2 Gen3 or SATA	Two M.2-2280 slots for M.2-SSDs 1) supports PCIe/NVMe or SATA 2) supports SATA or 4G/5G kit	M.2-2280 slot for M.2-SSD P52U : PCIe X4 Gen 2 / SATA P52U3 : PCIe X4 Gen 3 / SATA
2.5" bay	—	—	2.5" bay (max. 9.5 mm, SATA)
LAN	Intel 2.5G LAN (i226LM)	Intel Gigabit LAN (i219)	Intel Gigabit LAN (i219)
WLAN	Realtek RTL8821CE supports WLAN-ac and BT 4.2 2x internal antenna	Realtek RTL8821CE supports WLAN-ac and BT 4.2 2x internal antenna	No WLAN module (2 internal antennas pre-installed)
Audio	Realtek ALC888S (HD Audio)	Realtek ALC888S (HD Audio)	C-Media CM6542 (USB) or Realtek ALC269 (HD Audio)
Connectors Left side	Power button 2x USB 3.2 Gen 2 Hole with Clear CMOS button 2x Perforation for ext. antennas	Power button 2x USB 3.2 Gen 1 Hole with Clear CMOS button 2x Perforation for ext. antennas	Power button 2x USB 3.2 Gen 1 Hole with Clear CMOS button 1x Perforation for ext. antennas SD card reader
Connectors Right side	Hole for Kensington Lock 2x Perforation for ext. antennas	Hole for Kensington Lock 2x Perforation for ext. antennas	Hole for Kensington Lock 1x Perforation for ext. antennas Optional: 2x COM (D-Sub)
Connectors Bottom	HDMI 2.0b VGA/D-Sub 4x USB 3.2 Gen 1 2x COM (RS232) 2.5G LAN (Intel) Audio Line-Out Microphone Input DC input (supports 12V and 19V)	HDMI 2.0b VGA/D-Sub 2x USB 3.2 Gen 2 2x USB 3.2 Gen 1 2x COM (RS232+RS232/422/485) Gigabit LAN (Intel) Audio Line-Out Microphone Input DC input (supports 12V and 19V)	HDMI 1.4b VGA/D-Sub 2x USB 3.2 Gen 1 2x USB 2.0 2x COM (RS232) Gigabit LAN (Intel) Audio Line-Out Microphone Input DC input (supports 12V and 19V)
Power Adapter	65 W / 19 V 3-pin AC plug	90 W / 19 V 3-pin AC plug	65 W / 19 V 2-pin AC plug
Optional Shuttle Accessories	WLN-M12 (WLAN-ax-kit / Wi-Fi 6e with two external antennas) POV21 (Robust Dual VESA Stand)	WLN-M12 (WLAN-ax-kit / Wi-Fi 6e with two external antennas) WWN04 (4G/5G kit for mobile network with 4 antennas) POV21 (Robust Dual VESA Stand)	WLN-M12 (WLAN-ax-kit / Wi-Fi 6e with two external antennas) 2x PCP11 (COM port) POV21 (Robust Dual VESA Stand)

Product Comparison: Shuttle XPC All-in-One Models

Chassis	Display Size / Pixel / Type	Processor Type	Product Name by Intel processor-generations			Chassis Colour
			Gen. 10	Gen. 12/13	Twin Lake-N	
	11.6" 1366 x 768 Capacitive Multitouch	Celeron (P25N: N-Series processor)	P22U	P25N	—	Black
	15.6" 1366 x 768 Resistive Singletouch	Celeron or N-Series	X50V8	X50V9	X50N	Black, White
		Core i3	X50V8U3	X50V9U3	—	Black, White
	15.6" 1920 x 1080 Capacitive Multitouch	Celeron or N-Series	P52U	P55U	P56N	Black
		Core i3	P52U3	P55U3	—	Black
	19.5" 1600 x 900 Capacitive Multitouch	Celeron	P92U	—	—	Black, White
		Core i3	P92U3	—	—	Black, White
		Core i5	P92U5	—	—	Black

SHUTTLE XPC all-in-one BAREBONE P56N Black — SPECIFICATIONS

FANLESS AND SILENT	Passive heatpipe cooling, no fan noise at all Perfect to be used in noise-sensitive environments Fanless, dust-free and thus virtually maintenance-free
24/7 NONSTOP OPERATION	This device is approved for 24/7 permanent operation. Requirements: - Free circulation of air amongst the PC must be guaranteed. - Ventilation holes must be kept clear.
IP54 PROTECTED	The front panel is dust-protected and protected from splashing of water according to protection class IP54.
CHASSIS	Colour: black Dimensions: 393.6 x 272.5 x 39.8 mm (W x H x D) 100 mm VESA mount with installed hinged stand Hole for optional Kensington lock (right side) Weight: 3.31 kg net, 4.55 kg gross
OPERATING SYSTEM	This system comes without operating system. It is compatible with: - Windows 11 - 64-bit - Linux - 64-bit
TOUCHSCREEN	Capacitive Touch Panel with 10-point multi-touch
15.6" DISPLAY	39.6 cm / 15.6" LC display, IPS technology Ratio: 16:9 wide-screen panel Native resolution: 1920 x 1080 = 2 Megapixel (Full HD / 1080p) Brightness: 250 cd/sqm
PROCESSOR	Model: Intel® Processor N150 Max. Turbo clock frequency: 3.6 GHz Code name: "Twin Lake" (Alder Lake-N series) Intel 7 (10 nm) process, BGA1264 package (soldered) CPU cores / Threads: 4 / 4 L2 Cache: 6 MB Thermal Design Power (TDP): 6 W System-on-Chip processor (SoC) with integrated graphics processor, no chipset required Passive processor cooling without fan
INTEGRATED GRAPHICS	Intel® Graphics GPU clock frequency: max. 1000 MHz Execution Units (EUs): 24 Supports DirectX 12.1, OpenGL 4.6, OpenCL 3.0
SUPPORTS TRIPLE DISPLAY	Up to three displays simultaneously Two video ports support two additional independent screens: 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) Special conditions for operation in Multi-Monitor mode: - Clone mode: all displays show the same content at 1920 x 1080 resolution - Extended mode: all displays show different content
BIOS	AMI BIOS in 32 MByte EEPROM with SPI interface Supports Power fail resume / always on Supports Wake-on-LAN (WOL) from S3, S4, S5 ACPI states Supports hardware monitoring and Watchdog functionality Supports Firmware TPM v2.0 functionality
BUTTON CELL BATTERY	The product contains a built-in 3V button cell battery For further information see footnote [1]
MEMORY SUPPORT	1x SO-DIMM slot with 262 pins Supports DDR5-4800 (PC5-38400) SDRAM at 1.1 V Supports a maximum capacity of 16 GB Supports DDR5 memory modules with higher frequency rating Supports two unbuffered DIMM modules (no ECC or registered) Install the thermal pad provided!

M.2 SLOT FOR SSD CARDS	M.2-2280 M-key slot Interfaces: PCI-Express Gen. 3.0 x2 and SATA Supports M.2 SSD cards with a width of 22 mm and a length of 80 mm (type 2280) Supports SATA SSDs (BM-Key) or NVMe PCIe SSDs (M-Key) Install the thermal pad provided!
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 i226LM Ethernet Controller Supports 100 / 1.000 / 2.500 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 2x USB 3.2 Gen 2 (max. 10 Gbps, red) Hole with hidden Clear CMOS button (onboard micro switch) 2x perforation for optional external antenna Connectors right side 2x perforation for optional external antenna Hole for optional Kensington lock
CONNECTORS BOTTOM SIDE	HDMI 2.0b (supports digital video and digital audio) VGA connector (D-Sub 15 pol., analog video) 4x USB 3.2 Gen 1 (max. 5 Gbps, blue) 2.5G Network (LAN, RJ45, Intel i226LM) 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, supports 12V and 19V) 2x COM/serial (D-Sub, RS232)
HOLES FOR 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 65 W AC/DC power adapter (fanless) AC Input: 100 ~ 240 V AC, 50 ~ 60 Hz, max. 1.5 A, C6 connector Automatic AC voltage adjust DC Output: 19 V, max. 3.42 A, max. 65 W DC Connector: 5.5 / 2.5 mm (outer/inner diameter) DC cable length: ca. 170 cm AC cable length: ca. 170 cm AC cable with 3-pin Micky MM C5 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 11 External Power Adapter (65W / 19V) AC Power cord with protective-earth contacts M3x4 silver screw for mounting one M.2 SSD card Thermal pad 70 x 20 x 4.5 mm for cooling a M.2 SSD card Thermal pad 60 x 20 x 4.0 mm for cooling a DDR5 RAM module
OPTIONAL ACCESSORIES	1) WLAN Kit WLN-M12 (Intel AX210 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. 2) Robust VESA Stand POV21: supports one or two AIO-PCs/Displays with 75x75 or 100x100 mm VESA (max. 21.5" display size and 20 kg total weight).
ENVIRONMENTAL SPECIFICATIONS	Operating temperature: 0~40 °C Humidity: 10~90 %, non-condensing
CERTIFICATIONS / COMPLIANCE	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
CONFORMITY	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)

[1] Button Cell Battery

- **Purpose:**
The built-in button cell battery on the mainboard supplies the CMOS memory and the Real-Time Clock (RTC) with power so that certain settings are retained and the internal clock continues to run – even if the PC is completely switched off or disconnected from the power supply.
- **Specification:**
Model: Lixing KTS CR2032 with cable and connector (Molex 51021-8602, 2-pin, 1.25 mm pitch)
Type: Lithium metal battery, non-rechargeable, transport identification: UN 3091 (battery is built-in)
Nominal voltage: 3.0V, nominal capacity: 220 mAh (0.66 Wh)
Dimensions: 20 mm diameter, 3.2 mm thickness
Weight: 3.2 g, of which 0.063 g lithium (2.1%)
Manufacturer: Wuhan Lixing (Torch) Power Sources Co, Ltd, Address: No. 7 Plot, Guandong, Science and Technology Industrial Park, East Lake Development Zone, Wuhan, Hubei, China
- **Certificates:**
Material Safety Data Sheet (MSDS), UN38.3 test report, ISO 9001 of the manufacturer, EU DoC
Download here: <https://go.shuttle.eu/Py1Jn>
- **Replace the battery:**
If the PC issues error messages about the clock or CMOS when starting up, the system's CMOS battery probably needs to be replaced. Use a model with the same technical characteristics as a replacement battery or contact our technical support at support@shuttle.eu.
The replacement of a CMOS battery may only be carried out by qualified specialist personnel. Improper handling can lead to damage to the mainboard, loss of data or electrical risks. Disconnect the device from the power supply before opening it. Make sure that you do not injure yourself on the sharp metal edges inside the computer. Open the device according to the Quick Installation Guide supplied. Find the battery and pull on the connecting cable so that the plug comes off the mainboard (see photo below). Before pulling out, pay attention to the polarity based on the cable colours (red and black). Carefully remove the old battery, which is stuck on with an adhesive pad. With the new battery, remove the protective film from the adhesive pad and stick the battery in the same position, connect the cable and reassemble the PC. When switching on for the first time, press the "DEL" key, load the "Default Settings" in the BIOS and make any other necessary settings before saving the settings and exiting the BIOS setup.

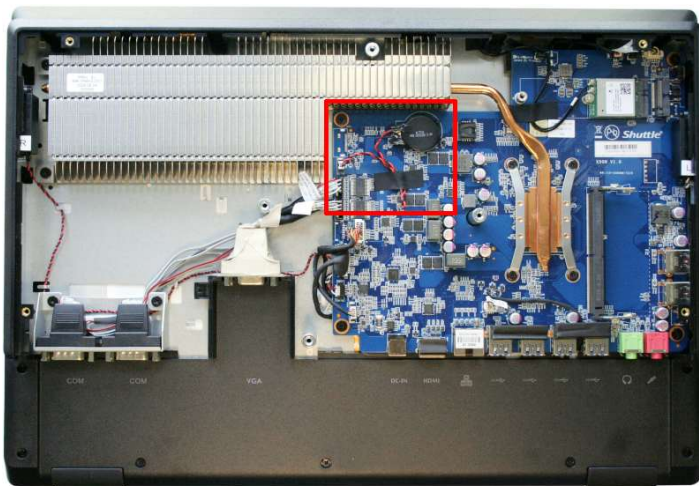
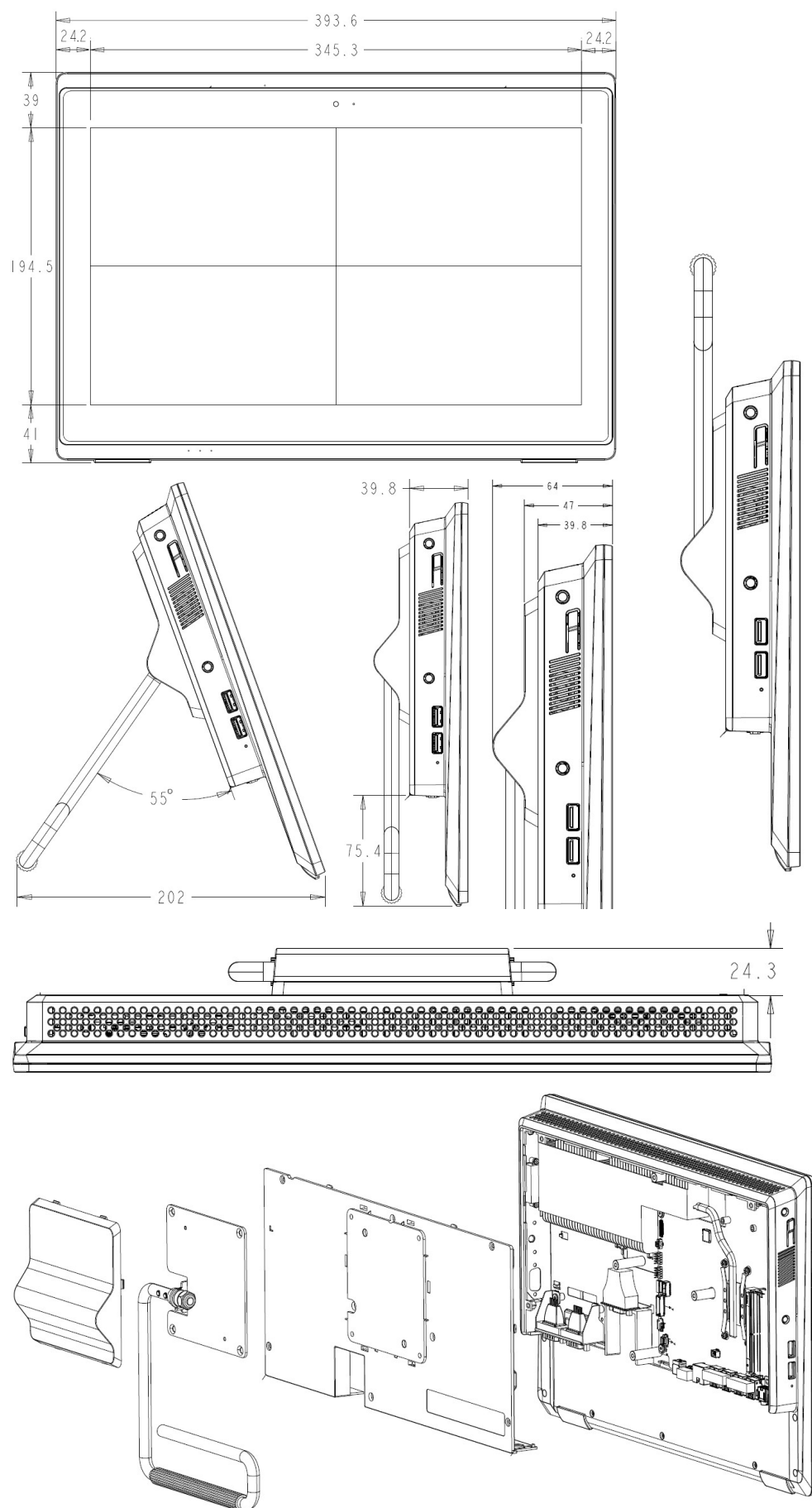


Photo: Position of the button cell battery and the connector on the mainboard with the computer housing open.

- **Disposal:**
Batteries are classified as hazardous waste and must be disposed of properly. Do not throw them in the household trash. Dispose of batteries at the designated collection points prescribed by law in your country, e.g. at the dealers' collection points.
- **Safety instructions:**
This product contains a lithium button cell battery that can cause serious or fatal injury within 2 hours if swallowed. Not intended for children under the age of three.

P56N Series – Technical Drawings



P56N Series – Technical Drawings

