

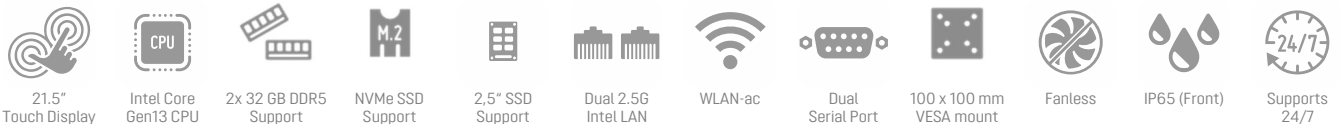
Panel PC Barebone P21RL01-i3 Intel Core i3-1315U

INDUSTRY-GRADE PANEL PC WITH 21.5" TOUCH-DISPLAY

The high-value P21RL01 series of Panel PCs comes with a rugged Aluminium chassis with a IP65 compliant front panel and is powered by an Intel Core Gen13 ULV processor. The display is Full-HD and sports a projected capacitive 10-point multi-touch function. With its passive cooling the system is virtually noiseless, maintenance-free and approved for 24/7 nonstop operation. This makes it the perfect choice for rugged and public applications such as healthcare, hospitality sector, digital signage, POI, POS, Kiosk and industry.



Images for illustration only.



ROBUST CHASSIS

- Colour: dark blue (rear) and black (front) ■ Robust Aluminium chassis (3 mm thickness) with magnetic cover for the I/O connectors ■ IP65 front panel protection ■ Dimensions (WHD): 543 x 334 x 49.9 mm
- Net weight: 7.6 kg ■ Fanless cooling system ■ Operating temperature: 0 ~ 40 °C ■ Humidity: 20 ~ 80% RH non-condensing ■ Supports 100 x 100 mm VESA mount (VESA mount and stand are not included)

TOUCH PANEL AND GRAPHICS

- High quality 21.5" / 54.6cm display with 1920x1080 pixels ■ Brightness: 500 cd/m2 (nits), Contrast ratio 1000:1, Viewing angle: 89° (all directions), Response time: 22 ms ■ Capacitive touch panel with 10-point multi-touch ■ Integrated Intel UHD graphics

OPERATING SYSTEM

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

PROCESSOR

- Intel Core i3-1315U, 2x P-Core, 4x E-Core, 10 MB Cache
- Intel Core Gen. 13, "Raptor Lake" ULV Prozessor, 15 W TDP

RAM & SSD SUPPORT (not included)

- RAM: 2x 262-pin S0-DIMM slot supports up to 2x 32 GB DDR5-5200
- M.2-SSD card: M.2-2280/2242 M slot supports PCIe/NVMe and SATA
- Swappable drive tray for 2.5"/7mm SATA SSD storage drive

BACK PANEL CONNECTORS

- 2x HDMI 2.0b ■ 4x USB 3.2 Gen 2 (10 Gbps) ■ 4x USB 2.0
- Dual 2.5G LAN (Intel 226) ■ 2x COM Ports (RS232)
- Mic-in and Line-out ■ DC-input 19V
- Power Button and Easy Rock Switch

OTHER FEATURES

- WLAN 802.11ac / BT 4.2 with two internal antennas ■ Hardware TPM v2.0 ■ Full-HD Webcam ■ Two internal speakers (2x 2W, stereo)

POWER SUPPLY

- Power adapter 90W/19V
- AC input 100~240V 50~60 Hz, 3-pin connector
- DC input: 19V (optional 9~36V on request)



Shuttle Panel-PCs with Intel Core Gen13 Processors "Raptor Lake-U"

Touch Screen	Application	Panel-PC Model	Intel Processor	UPC Bar Code	Color (front / rear)	Medical Features
15.6" Full-HD 350 Nits	Industrial	P15RL01-i5	Core i5-1335U	887993008967	Black / Blue	—
	Medical	M15AL11-i5	Core i5-1335U	887993009810	White / White	Anti-bacterial coating, POAG pin, Medical power adapter
21.5" Full-HD 500 Nits	Industrial	P21RL01-i3 P21RL01-i5	Core i3-1315U Core i5-1335U	887993008974 887993008981	Black / Blue	—
	Medical	M21AL11-i5	Core i5-1335U	887993009841	White / White	Anti-bacterial coating, POAG pin, Medical power adapter

Front and Back Panel

Front panel



1. 21.5" Touch Panel
2. Full-HD Webcam

Optional Shuttle Accessory:

Robust Dual VESA Stand POV21 Black

The flexible design supports one or two Panel-PCs or Displays with 75x75 mm or 100x100 mm VESA mount up to 21.5" display size and a total weight of up to 20 kg. POV21 features optimised cable management with magnetic back cover and is flexible and easy to adjust.



Rear View



3. Screw threads for VESA mount (100x100 mm)
4. Swappable 2.5" drive tray for SSD (7 mm)
5. Perforation for optional Potential Equalization Pin (POAG, DIN 42801)
6. HDMI 2.0b graphics port
7. 4x USB 2.0 Type A
8. RS232 Serial COM Port
9. Audio Line Out (Headphones output)
10. Microphone input
11. 2.5G LAN Port (Intel i226V)
12. 2.5G LAN Port (Intel i226LM)
13. 4x USB 3.2 Gen 2 Type A port
14. HDMI 2.0b graphics port
15. RS232 Serial COM Port
16. DC-in connector for power adapter
17. Power button
18. Easy Rocker Switch
19. Rear cover with magnet holders

Back Panel



SPECIAL FEATURES



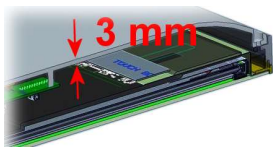
Reliable nonstop operation

The Shuttle Panel PC P21RL01-i3 is officially approved for 24/7 permanent operation at an ambient temperature of up to 40 °C. Thanks to its low power consumption and completely passive cooling, this PC runs highly reliably and is virtually noiseless.



21.5" Full-HD Touch Screen

This Panel PC has a high-grade 21.5" Full-HD display with high brightness (500 nits) and low viewing angle dependence ($\pm 89^\circ$). The capacitive multitouch screen can also be operated with gloves and allows precise input with two or more fingers at the same time.



Robust Aluminium Chassis

Rear chassis and middle frame are completely made of high-grade Aluminium of 3 mm thickness.



Protection Class IP65

The front panel is dust-protected and protected from splashing of water according to IP protection class 65. Consequently, the touchscreen can be cleaned very easily and effectively. This is particularly welcome in hospitals, doctor's offices, laboratories, aged care centres or other places.



Triple Display Support

In addition to the built-in display two more independent displays can be connected via two HDMI 2.0b ports.



VESA Mounting

The Shuttle Panel PC P21RL01-i3 has four threaded holes for mounting a 100 x 100 mm VESA mount, which is not included. For example, a suitable stand, VESA arm or wall mount can be used to mount the Panel PC. Note: VESA mount and stand are not included in the scope of delivery.



Optional Stand „POV21“

A stand is not included in the scope of delivery. With "POV21", Shuttle offers a suitable, robust stand made of high-quality aluminum alloy. Optionally, two devices can also be mounted on this stand (e.g. for a Panel PC and an additional display).



Optimized cable management

The connections on the back panel are facing down and hidden by a cover. The cover snaps in magnetically and is also fixed with screws.



Through a small opening the cables are led away from the PC in an orderly fashion. This leads to an effective cable management making for a clean, tidy appearance.



Hidden Power Button

Since the power button is not accessible when the cover is on, there is also a Rock Switch hidden on the back. You can also enable the "Restore on AC Power Loss" option in the BIOS so that it always starts immediately once voltage is applied.



External 2.5" Bay

A 2.5" drive bay for an SSD drive is accessible from the outside for easy swapping of storage for installation and upgrade convenience. Additionally, an SSD card in M.2-2280/2242 format can be installed inside.



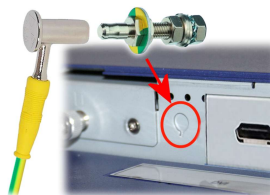
Dual Intel 2.5G Network

The Shuttle Panel PC P21RL01-i3 supports Dual 2.5G LAN with Intel network adapters, which are known for their excellent performance and driver compatibility and therefore are the preferred choice in professional environments.



Versatile connections

The numerous connections also include two serial COM ports (RS232) and eight USB ports (including 4x USB 3.2).






Potential equalization (opt.)

A 6.5 mm perforation allows the installation of an optional potential equalization pin (POAG) according to DIN 42801 in order to connect the Panel PC with a suitable potential equalization terminal, that can be required in medical environments, for example.

Shuttle Panel PC product comparison with previous generation

Display Size	Application / Colour	Intel Core Generation 12	Intel Core Generation 13
15.6" 1920x1080 pixels Touch Panel 350 nits	Industrial Panel-PC Front: Black, Back cover: Blue Standard power adapter 	Model: P15AL01-i5 CPU: Intel Core i5-1235U Graphics ports: HDMI+VGA DC input: 9-36 V (wide range)	Model: P15RL01-i5 CPU: Intel Core i5-1335U Graphics ports: 2x HDMI DC input: 19 V
	Medical Panel-PC White color, Anti-bacterial, POAG connector, Medical power adapter 	Model: M15AL01-i5 CPU: Intel Core i5-1235U Graphics ports: HDMI+VGA DC input: 19 V	Model: M15AL11-i5 CPU: Intel Core i5-1335U Graphics ports: 2x HDMI DC input: 19 V
21.5" 1920x1080 pixels Touch Panel 500 nits	Industrial Panel-PC Front: Black, Back cover: Blue Standard power adapter 	Model: P21AL01-i3/i5 CPU: Intel Core i3-1215U / i5-1235U Graphics ports: HDMI+VGA DC input: 19 V	Model: P21RL01-i3/i5 CPU: Intel Core i3-1315U / i5-1335U Graphics ports: 2x HDMI DC input: 19 V
	Medical Panel-PC White color, Anti-bacterial, POAG connector, Medical power adapter 	Model: M21AL01-i5 CPU: Intel Core i5-1235U Graphics ports: HDMI+VGA DC input: 19 V	Model: M21AL11-i5 CPU: Intel Core i5-1335U Graphics ports: 2x HDMI DC input: 19 V

Shuttle Panel-PCs with Intel Gen13 Prozessor

Display Size	15.6" Display		21.5" Display	
Model	P15RL01-i5	M15AL11-i5	P21RL01-i3/i5	M21AL11-i5
Application	Industrial Panel-PC	Medical Panel-PC	Industrial Panel-PC	Medical Panel-PC
Chassis Color	Front: black Back: dark blue	Front: white Back: white	Front: black Back: dark blue	Front: white Back: white
Medical Coating	—	Anti-Bacterial Coating (front and rear)	—	Anti-Bacterial Coating (front and rear)
Processor Options	Intel Core i5-1335U	Intel Core i5-1335U	Intel Core i3-1315U oder Intel Core i5-1335U	Intel Core i5-1335U
Display Features	Resolution: 1920 x 1080 Brightness: 350 nits 10-point capacitive touch	Resolution: 1920 x 1080 Brightness: 350 nits 10-point capacitive touch	Resolution: 1920 x 1080 Brightness: 500 nits 10-point capacitive touch	Resolution: 1920 x 1080 Brightness: 500 nits 10-point capacitive touch
I/O Ports	2x HDMI 2.0b 4x USB 3.2, 4x USB 2.0 2x Intel LAN (2.5G), 2x Audio, 1x COM	2x HDMI 2.0b 4x USB 3.2, 4x USB 2.0 2x Intel LAN (2.5G), 2x Audio, 1x COM	2x HDMI 2.0b 4x USB 3.2, 4x USB 2.0 2x Intel LAN (2.5G), 2x Audio, 2x COM	2x HDMI 2.0b 4x USB 3.2, 4x USB 2.0 2x Intel LAN (2.5G), 2x Audio, 2x COM
POAG *)	—	POAG connector with cable	—	POAG connector with cable
M.2-Slot for SSD	Supports M.2-2280 SSD card PCIe Gen4 x4 (NVMe) / SATA	Supports M.2-2280 SSD card PCIe Gen4 x4 (NVMe) / SATA	Supports M.2-2280 SSD card PCIe Gen4 x4 (NVMe) / SATA	Supports M.2-2280 SSD card PCIe Gen4 x4 (NVMe) / SATA
2.5" Bay for SSD	—	—	Supports 2.5" SSD (SATA)	Supports 2.5" SSD (SATA)
WLAN Antenna	Internal Antennas	Internal Antennas	Internal Antennas	Internal Antennas
Power Adapter	Standard Power Adap. 90W IEC 62368-1 / 60950-1	Medical Power Adapter 90W IEC 60601-1 / EN55011	Standard Power Adap. 90W IEC 62368-1 / 60950-1	Medical Power Adapter 90W IEC 60601-1 / EN55011
DC-Input **)	DC-Input supports 19V **)	DC-Input supports 19V **)	DC-Input supports 19V **)	DC-Input supports 19V **)
Front View				
Rear View				

*) **POAG:** Shuttle Medical Panel-PCs come with an **Potential Equalization Pin** (POAG) in order to connect the PC with a potential equalization terminal.

) **the DC-Input normally supports 19V input voltage only. However, an optional voltage regulator module V0L01 can be added to support an extended voltage range of 9...36V.

SHUTTLE Panel PC P21RL01-i3 – SPECIFICATIONS

FANLESS AND SILENT	<p>Passive heatpipe cooling, absolutely no fan noise</p> <p>Perfect for 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. - If a SSD is installed, this must also be approved for permanent operation by its manufacturer.
IP65 PROTECTED	<p>The front panel is protected from dust and jets of water according to protection class IP65.</p>
CHASSIS	<p>Robust chassis with cover for the I/O connectors</p> <p>Rear/cable cover and middle frame are all made of Aluminium</p> <p>Rear cover chassis thickness: 3.0 mm</p> <p>Colour: Dark Blue (rear) and Black (front)</p> <p>Dimensions: 543 x 334 x 49.9 mm (W x H x D)</p> <p>Net weight: 7.6 kg</p> <p>100x100 mm VESA mountable, 4x M4x6L screws required)</p> <p>VESA mount and stand are not included in the scope of delivery.</p> <p>Shuttle recommends the optional Shuttle Stand POV21.</p>
OPERATING SYSTEM	<p>This system comes without operating system. It is compatible with:</p> <ul style="list-style-type: none"> - Windows 11 (64-bit) - Linux (64-bit)
TOUCHSCREEN	<p>Touchscreen function supports fingertip input</p> <p>Projected capacitive touch panel with 10-point multi-touch and antibacterial coating</p> <p>Supports input with gloves (PVC, cotton, cotton/linen)</p> <p>Stylus pen not supported</p>
DISPLAY (54.6 cm / 21.5")	<p>54.6 cm / 21.5" LC display</p> <p>Type: a-Si TFT-LCD, VA mode</p> <p>Ratio: 16:9 wide-screen panel</p> <p>Native resolution: 1920 x 1080 = 2 Megapixel (Full HD / 1080p)</p> <p>Viewing angle (left/right/up/down): 89°</p> <p>Brightness: 500 cd/sqm or nits (typ.)</p> <p>Contrast: 1000:1 (typ.)</p> <p>Viewing Angle: 89°/89°/89°/89° (typ.)</p> <p>Response time: 22 ms (typ.)</p>
PROCESSOR	<p>Model: Intel Core i3-1315U</p> <p>Code name: Raptor Lake-U (13th generation Intel Core)</p> <p>Performance-cores (P-Cores): 2 cores (4 threads), Basic/Turbo clock: 1.2-4.5 GHz</p> <p>Efficient-cores (E-Cores): 4 cores (4 threads), Basic/Turbo clock: 0.9-3.3 GHz</p> <p>Smart-Cache (L3): 10 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>FCBGA1744 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. 1250 MHz</p> <p>Execution Units (EUs): 64</p> <p>Supports up to three independent displays via the built-in Full HD display (supports 1080p/60) and two external displays, which can be connected via the two HDMI 2.0b ports (supporting 1080p/60 and 2160p/60).</p>
UEFI BIOS	<p>Supports resume after power failure</p> <p>Supports Wake on LAN (WOL)</p> <p>Supports Power on by RTC Alarm</p> <p>Supports boot from M.2 SSD cards and USB devices</p> <p>AMI BIOS in EEPROM with SPI interface</p> <p>Supports hardware monitoring and Watchdog function</p> <p>Supports Unified Extensible Firmware Interface (UEFI)</p>
TPM MODULE	<p>Hardware Trusted Platform Module (Infineon SLB9670VQ2 TPM 2.0)</p>
BUTTON CELL BATTERY	<p>The product contains a built-in 3V button cell battery</p> <p>For further information see footnote [1]</p>

POWER ADAPTER	<p>External 90 W power adapter (fanless) Input: 100~240 V AC, 50/60 Hz Output: 19 V DC, 4.74 A, max. 90 W DC Connector: 5.5/2.5 mm (outer/inner diameter) AC mains cable: 3 pins, ca. 1.8 m length, with C5/C6 coupler (called "Mickey Mouse" or "Clover-leaf") for the power adapter and CEE-7/7 plug with earth-contact (type E+F) for the power outlet</p>
DC INPUT CONNECTOR	<p>DC Input Connector: 5.5 / 2.5 mm (outer/inner diameter) The DC-input of the computer supports an external power source with 19V ± 5%.</p>
WIDE DC-IN RANGE (OPTIONAL)	<p>The DC input voltage range can optionally be extended to support 9-36 V. For this purpose, the accessory VOL01 must be purchased separately.</p>
MEMORY SUPPORT	<p>2x SO-DIMM slot with 262 pins Supports DDR5-5200 (PC5-41600) SDRAM at 1.1 V Supports memory modules with higher frequency rating (e.g. DDR5-6400) Supports Dual Channel mode Supports a maximum of 32 GB per DIMM, maximum total size: 64 GB</p>
2.5" BAY SUPPORTS SSDs	<p>Supports one SATA SSD drive in 6.35 cm / 2.5" format and up to 7 mm in height The SATA 3.0 interface supports up to 600 MB/s of data transfer speed (6 Gbit/s) The drive can quickly be installed via the swappable drive tray. No Hot-Swap capability (exchanging during a running operation)</p>
M.2 SLOT FOR SSDs	<p>The M.2 2280 M slot provides the following interfaces: - PCI-Express Gen. 4.0 X4 - SATA v3.0 (max. 6 Gbps) It supports M.2 SSD cards with a width of 22 mm and a length of 80 or 42 mm (type 2280 or 2242). Supports M.2 SATA SSDs (with B+M key) and M.2 PCIe NVMe SSDs (with M key) with auto interface detect</p>
WEBCAM	<p>Integrated Full-HD 2.0 Megapixel (1920 x 1080) camera</p>
AUDIO & SPEAKERS	<p>Audio Realtek® ALC888S High-Definition Audio Two analog audio connectors (3.5 mm) on the back panel: 1) 2 channel line out (headphones) 2) microphone input Digital multi-channel audio output: via HDMI Two built-in speakers (2x 2W Stereo)</p>
DUAL 2.5G LAN	<p>Dual network with RJ45 ports and Intel i226 network chips (black connector: Intel i226V, yellow connector: Intel i226LM) Supports 10 / 100 / 1000 / 2500 MBit/s operation Supports WAKE ON LAN (WOL) Supports network boot by Preboot eXecution Environment (PXE)</p>
WIRELESS NETWORK (WLAN)	<p>Built-in M.2-2230-E WLAN card with two internal antennas WLAN Controller Realtek RTL8821CE Supports WiFi IEEE 802.11b/g/n/ac in 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 in the 2.4 GHz band</p>
BACK PANEL CONNECTORS	<p>Power Button and Easy Rocker Switch 2x HDMI 2.0b (digital video+audio) 4x USB 3.2 Gen 2 Type A (max. 10 Gbps) 4x USB 2.0 Type A 2x Intel 2.5G LAN (RJ45, Intel i226V and i226LM) 2x Serial Port DB9/D-sub (RS232) Microphone input (3.5 mm) Audio Line-out / Headphones (3.5 mm) DC-input connector for external power adapter (19V / 90W) Perforation for optional Potential Equalization Pin (POAG) according to DIN 42801</p>
OTHER CONNECTION OPTIONS	<p>The backpanel has three sections, which can be assigned with other connections. The standard version is equipped with HDMI, COM (RS232) and Quad USB 2.0, while VGA, DVI-I and additional USB 2.0 ports are also available.</p>

OPTIONAL ACCESSORIES	<ul style="list-style-type: none"> - Robust VESA Stand POV21: supports one or two Panel-PCs or Displays with 75x75 or 100x100 mm VESA (max. 21.5" display size and 20 kg total weight). - Wide Voltage Range VOL01: supports DC-Input 9-36 V DC (instead of 19V only)
ENVIRONMENTAL SPECIFICATIONS	<p>Operating temperature: 0 ~ 40 °C Storage temperature: -20 ~ 60 °C Permitted relative humidity: 20 ~ 80 % (non-condensing)</p>
CONFORMITY AND CERTIFICATIONS	<p>EMI: CE, FCC, BSMI Safety: CB, cTUVus, BSMI RF: EU, US, Taiwan</p> <p>This device is classed as a technical information equipment (ITE) in class B. 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>

[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.

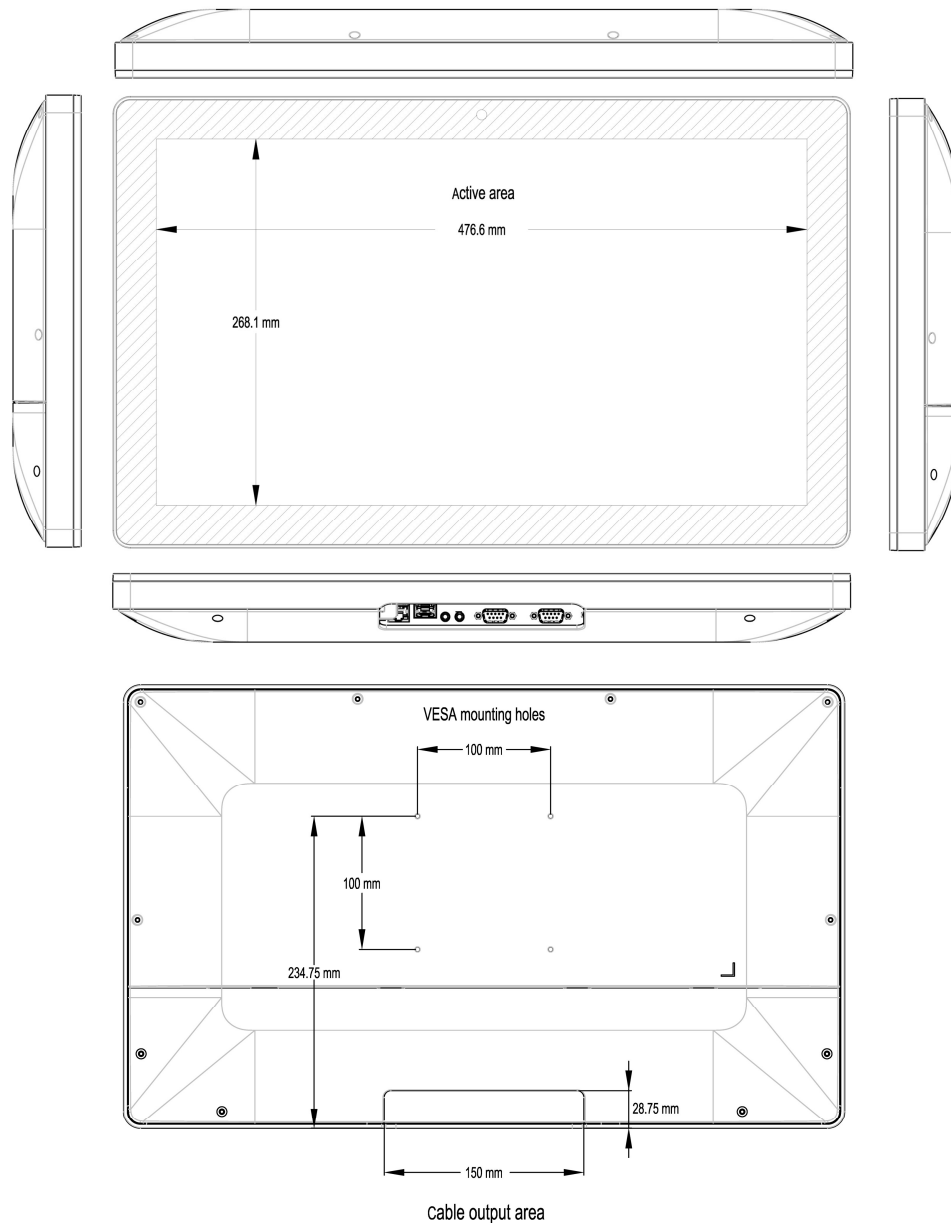


Photo: Position of the button cell battery and the connector on the mainboard with the computer housing open.

- **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.

SHUTTLE Panel PC P21RL01-i3 — TECHNICAL DRAWING

Overall dimensions: 543 x 334 x 49.9 mm (WHD)



VESA mount and stand are not included in the scope of delivery.