

## Panel-PC Barebone M15AL01-i5 White

Intel Core i5-1235 ULV CPU

### MEDICAL-GRADE PANEL PC WITH 15.6" TOUCH-DISPLAY

This high-value Panel PC comes features a rugged Aluminium chassis with an anti-bacterial coating and IP65-rated front panel for superior hygiene and infection control. It is powered by an Intel Core Gen12 processor and the Full-HD display 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. Compliant with IEC 60601-1 medical safety standards for electrical devices, this Panel PC is built for reliable operation in a wide range of healthcare environments.



Images for illustration only.



15.6" Touch Display



Anti-Bacterial Housing



2x 32 GB Support



NVMe SSD Support



WLAN/BT Ext. Antennas



HDMI 2.0b & VGA Port



4x USB 3.2 & 4x USB 2.0



Serial Port



100 x 100 mm VESA mount



Fanless



IP65 (Front)



24/7 Support

### ROBUST CHASSIS

- Robust Aluminium chassis (3 mm thickness) with magnetic cover for the I/O connectors
- IP65 front panel protection
- Dimensions (WHD): 394.3 x 256.2 x 48.9 mm
- Net weight: 4.6 kg
- Fanless cooling system
- Operating temperature: 0 ~ 40 °C
- Humidity: 20 ~ 80% RH non-condensing
- Mounting holes for 100 x 100 mm VESA mount (VESA mount and stand are not included)

### MEDICAL-GRADE FEATURES

- Anti-bacterial coating based on an inorganic zinc compound (front panel) and epoxy/polyester resin (rear chassis)
- Medical power adapter (90 W)
- Potential equalization pin (POAG)
- Medical certificates: CE EN60601-1-2:2015+A1:2021, FCC Part 18, cTUVus(ANSI/AAMI ES60601-1:2005/A2:2021), CB(IEC 60601-1:2005/AMD2:2020)

### TOUCH DISPLAY

- High quality 15.6" / 39.6cm display with 1920x1080 pixels
- Brightness: 350 cd/m2, Contrast ratio 1000:1, Viewing angle: 89° (all directions)
- Capacitive touch panel with 10-point multi-touch
- Supports two additional displays with HDMI 2.0b and VGA ports

### OPERATING SYSTEM

- An operating system is not included.
- Supports Windows 10, Windows 11 and Linux (64-bit)

### PROCESSOR & GRAPHICS

- Intel Core i5-1235, 2 P-Cores, 8 E-Cores, 12 MB Cache
- "Alder Lake" ULV Prozessor (Gen 12), 15 W TDP
- Integrated Intel® Iris® Xe graphics

### MEMORY/STORAGE (not included)

- RAM: 2x 262-pin SO-DIMM slot supports up to 2x 32 GB DDR5-4800
- M.2-SSD card: M.2-2280/2242 M slot supports PCIe/NVMe and SATA

### BACK PANEL CONNECTORS

- HDMI 2.0b
- VGA
- 4x USB 3.2 Gen 2
- 4x USB 2.0
- 2x 2.5 Gbps LAN (Intel i226LM + i226V)
- COM Port (RS232)
- Mic-in and Line-out (Realtek)
- POAG connector
- D C-input: 19V

### OTHER FEATURES

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

### POWER SUPPLY

- External 90W/19V power adapter
- AC input 100~240V 50~60 Hz, 3-pin connector
- Optional Wide Voltage Range: 9-36V (Accessory: VOL01)



### Shuttle Panel-PCs with Intel Core Gen12 Processors "Alder Lake-U"

| Touch Screen           | Application | Panel-PC Model           | Intel Processor                | UPC Bar Code                 | Color (front / rear) | WLAN Antennas | DC Input | Medical Features                                        |
|------------------------|-------------|--------------------------|--------------------------------|------------------------------|----------------------|---------------|----------|---------------------------------------------------------|
| 15.6" Full-HD 350 Nits | Industrial  | P15AL01-i5               | Core i5-1235U                  | 887993007885                 | Black / Blue         | external      | 9-36 V   | —                                                       |
|                        | Medical     | M15AL01-i5               | Core i5-1235U                  | 887993007526                 | White / White        | internal      | 19 V     | Anti-bacterial coating, POAG pin, Medical power adapter |
| 21.5" Full-HD 500 Nits | Industrial  | P21AL01-i3<br>P21AL01-i5 | Core i3-1215U<br>Core i5-1235U | 887993007366<br>887993007359 | Black / Blue         | internal      | 19 V     | —                                                       |
|                        | Medical     | M21AL01-i5               | Core i5-1235U                  | 887993007588                 | White / White        | internal      | 19 V     | Anti-bacterial coating, POAG pin, Medical power adapter |

## Front and Back Panel

Front panel



1. 15.6" Touch Panel
2. Full-HD Webcam

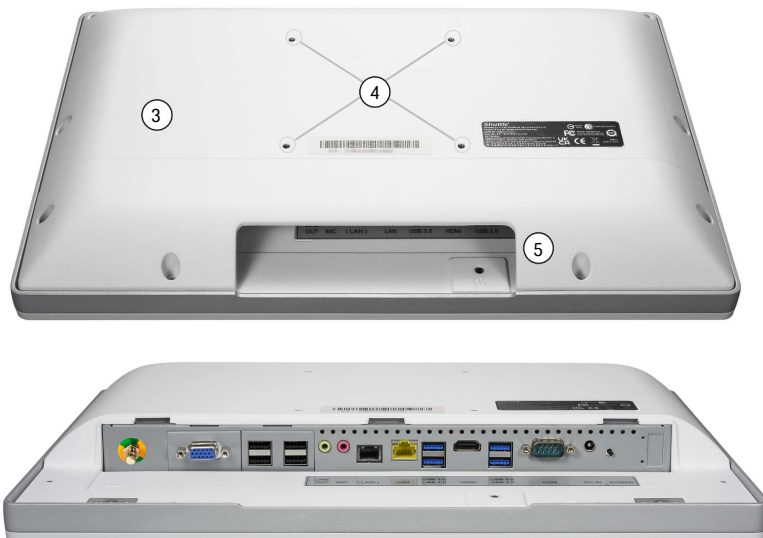
### Optional Shuttle Accessory:

#### **Robust Dual VESA Stand POV21**

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.

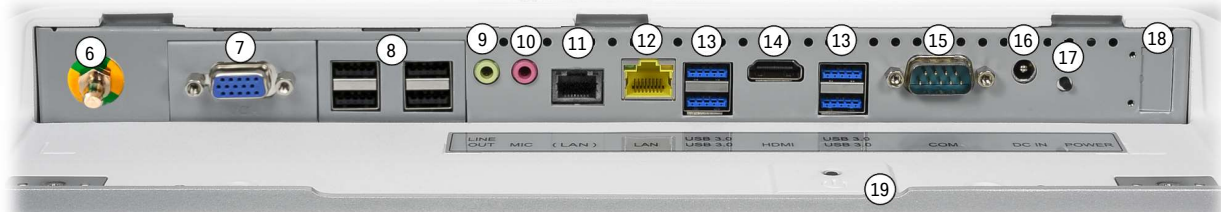


Rear View



3. Anti-bacterial coating
4. Screw threads for VESA mount (100x100 mm)
5. Mounted back panel cover
6. Potential Equalization Pin (POAG) according to DIN 42801
7. D-Sub/VGA port
8. 4x USB 2.0 Type A port
9. Audio Line Out (Headphones output)
10. Microphone input
11. 2.5 Gbps LAN port (Intel i226V)
12. 2.5 Gbps 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. Perforation (reserved)
19. Second Power Button

Back Panel



## SPECIAL FEATURES



### Reliable nonstop operation

The Shuttle Panel PC M15AL01-i5 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.



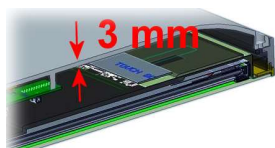
### 15.6" Full-HD Touch Screen

This Panel PC has a high-grade 15.6" (39.6 cm) Full-HD display with high brightness (350 cd/qm) and low viewing angle dependence ( $\pm 85^\circ$ ). The capacitive multitouch screen can also be operated with gloves and allows precise input with two or more fingers at the same time.



### Anti-Bacterial Coating

The housing of this Panel PC comes with an anti-bacterial coating based on an inorganic zinc compound as antimicrobial substance to reduce the possibility of infection or sepsis through microorganisms like bacteria.



### 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, this All-in-One PC can be used for those indoor applications, where the touchscreen may be exposed to humidity and splashing of water. This is particularly welcome in restaurants, laboratories, production or other places.



### Triple Display Support

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



### VESA Mounting

The Shuttle Panel PC M15AL01-i5 has four threaded holes for mounting a 100 x 100 mm VESA mount. 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 primary power button is not accessible when the cover is on, there is also a second power button 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.



### Dual Intel 2.5 Gbps Network

The Shuttle Panel PC M15AL01-i5 supports Dual 2.5 Gbps LAN with Intel network adapters, which are known for their excellent performance and driver compatibility and therefore are the preferred choice in professional environments.



### Potential equalization

The Shuttle Panel PC M15AL01-i5 features a 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.



### Other connection options

The backpanel has two sections, which can be assigned with other connectors, including HDMI, DVI, VGA, 4x USB and COM (RS232).

## Comparison with the previous model

| MODEL                  | M15AL01-i5 White (New)                                                                                                                      | P15WL01-i5 White                                                                                                              |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Medical-grade Features | Anti-Bacterial coating<br>Medical power adapter<br>Potential equalization pin (POAG)<br>Medical certificates                                | —                                                                                                                             |
| Processor              | <b>Intel Core i5-1235U</b><br>Intel Gen. 12 "Alder Lake-U",<br>TDP= 15W, Intel 7 (10 nm) Technology                                         | <b>Intel Core i5-8365UE</b><br>Intel Gen. 8 "Whiskey Lake-U",<br>TDP= 15W, 14 nm Technology                                   |
| RAM memory support     | 2x SO DIMM, 262 pins<br>max. 2x 32 GB <b>DDR5-4800</b> (or higher)                                                                          | 2x SO DIMM, 260 pins<br>max. 2x 32 GB DDR4-2400 (or higher)                                                                   |
| M.2-2280 Slot          | M.2-2280M slot for M.2 SSD cards<br>Supports M.2 SSD cards with <b>80 and 42 mm</b> in length<br>Supports NVMe/PCIe <b>Gen4</b> X4 and SATA | M.2-2280M slot for M.2 SSD cards<br>Supports M.2 SSD cards with 80 and 60 mm in length<br>Supports NVMe/PCIe Gen3 X4 and SATA |
| 15.6" Display          | Resolution 1920 x 1080<br>Brightness: 350 cd/qm (nits)<br>Viewing angle: 89° all directions                                                 | Resolution 1920 x 1080<br>Brightness: 350 cd/qm (nits)<br>Viewing angle: 89° all directions                                   |
| Intel vPro/AMT         | <b>No</b>                                                                                                                                   | vPro/AMT is supported                                                                                                         |
| TPM                    | Hardware TPM 2.0 module (Infineon SLB9670VQ2)                                                                                               | Hardware TPM 2.0 module (Infineon SLB9670VQ2)                                                                                 |
| Dual LAN               | <b>2x Intel LAN with 2.5 Gbps (Intel i226V and i226LM)</b>                                                                                  | 2x Intel LAN with 1 Gbps (Intel i211 and i219LM)                                                                              |
| WLAN                   | Realtek RTL8821CE, Wi-Fi 5 (WLAN-ac)<br><b>Two internal antennas</b>                                                                        | Realtek RTL8821CE, Wi-Fi 5 (WLAN-ac)<br>Two external antennas                                                                 |
| Grafik Ports           | <b>HDMI 2.0b</b><br>VGA                                                                                                                     | HDMI 1.4b<br>VGA                                                                                                              |
| USB Ports              | 4x USB 3.2 Gen2 (10 Gbps)<br>4x USB 2.0                                                                                                     | 4x USB 3.2 Gen1 (5 Gbps)<br>4x USB 2.0                                                                                        |
| COM Ports              | 1x Serial COM port (RS232)                                                                                                                  | 1x Serial COM port (RS232)                                                                                                    |
| Front View             |                                                          |                                           |
| Rear View              |                                                          |                                           |
| I/O Ports              |                                                          |                                           |

## Shuttle Panel-PCs with Intel Gen12 Prozessor

| Display Size      | 15.6" Display                                                                        |                                                                                      | 21.5" Display                                                                        |                                                                                       |
|-------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Model             | P15AL01-i5                                                                           | M15AL01-i5                                                                           | P21AL01-i3/i5                                                                        | M21AL01-i5                                                                            |
| Application       | Industrial Panel-PC                                                                  | Medical Panel-PC                                                                     | Industrial Panel-PC                                                                  | Medical Panel-PC                                                                      |
| Chassis Color     | Front: black<br>Back: dark blue                                                      | Front: white<br>Back: white                                                          | Front: black<br>Back: dark blue                                                      | Front: white<br>Back: white                                                           |
| Medical Coating   | —                                                                                    | Anti-Bacterial Coating<br>(front and rear)                                           | —                                                                                    | Anti-Bacterial Coating<br>(front and rear)                                            |
| Processor Options | Intel Core i5-1235U                                                                  | Intel Core i5-1235U                                                                  | Intel Core i3-1215U or<br>Intel Core i5-1235U                                        | Intel Core i5-1235U                                                                   |
| Display Features  | Resolution: 1920 x 1080<br>Brightness: 350 nits<br>10-point capacitive touch         | Resolution: 1920 x 1080<br>Brightness: 350 nits<br>10-point capacitive touch         | Resolution: 1920 x 1080<br>Brightness: 500 nits<br>10-point capacitive touch         | Resolution: 1920 x 1080<br>Brightness: 500 nits<br>10-point capacitive touch          |
| I/O Ports         | HDMI 2.0b, VGA<br>4x USB 3.2, 4x USB 2.0<br>2x Intel LAN (2.5G),<br>2x Audio, 1x COM | HDMI 2.0b, VGA<br>4x USB 3.2, 4x USB 2.0<br>2x Intel LAN (2.5G),<br>2x Audio, 1x COM | HDMI 2.0b, VGA<br>4x USB 3.2, 4x USB 2.0<br>2x Intel LAN (2.5G),<br>2x Audio, 2x COM | HDMI 2.0b, VGA<br>4x USB 3.2, 4x USB 2.0<br>2x Intel LAN (2.5G),<br>2x Audio, 2x COM  |
| POAG *)           | —                                                                                    | POAG connector with cable                                                            | —                                                                                    | POAG connector with cable                                                             |
| M.2-Slot for SSD  | Supports M.2-2280 SSD card<br>PCIe Gen4 x4 (NVMe) / SATA                             | Supports M.2-2280 SSD card<br>PCIe Gen4 x4 (NVMe) / SATA                             | Supports M.2-2280 SSD card<br>PCIe Gen4 x4 (NVMe) / SATA                             | Supports M.2-2280 SSD card<br>PCIe Gen4 x4 (NVMe) / SATA                              |
| 2.5" Bay for SSD  | —                                                                                    | —                                                                                    | Supports 2.5" SSD (SATA)                                                             | Supports 2.5" SSD (SATA)                                                              |
| WLAN Antenna      | External Antennas                                                                    | Internal Antennas                                                                    | Internal Antennas                                                                    | Internal Antennas                                                                     |
| Power Adapter     | Standard Power Adap. 90W<br>IEC 62368-1 / 60950-1                                    | Medical Power Adapter 90W<br>IEC 60601-1 / EN55011                                   | Standard Power Adap. 90W<br>IEC 62368-1 / 60950-1                                    | Medical Power Adapter 90W<br>IEC 60601-1 / EN55011                                    |
| DC-Input **)      | DC-Input supports 9-36V                                                              | 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 VOL01 can be added to support an extended voltage range of 9...36V. Among the Panel PCs listed above, only the P15AL01-i5 model is already equipped with VOL01 as standard.

## SHUTTLE Panel PC M15AL01-i5 — 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: free circulation of air amongst the PC must be guaranteed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| IP65 PROTECTED               | <p>The front panel is protected from dust and jets of water according to protection class IP65.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| CHASSIS                      | <p>Anti-bacterial coating based on an inorganic zinc compound (front panel) and epoxy/polyester resin (rear chassis)</p> <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: White</p> <p>Dimensions: 394.3 x 256.2 x 48.9 mm (W x H x D)</p> <p>Net weight: 4.6 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"> <li>- Windows 10 (64-bit)</li> <li>- Windows 11 (64-bit) - please enable TPM function</li> <li>- Linux (64-bit)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                       |
| TOUCHSCREEN                  | <p>Touchscreen function supports fingertip input</p> <p>Projected capacitive touch panel with 10-point multi-touch</p> <p>Supports input with gloves (PVC, cotton, cotton/linen)</p> <p>Stylus pen not supported</p>                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| DISPLAY<br>(39.6 cm / 15.6") | <p>39.6 cm / 15.6" LC display</p> <p>Type: a-Si TFT-LCD</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: 350 cd/sqm or nits (typ.)</p> <p>Contrast: 1000:1 (typ.)</p> <p>Signal Interface: eDP 30 pins (2 lanes)</p>                                                                                                                                                                                                                                                                                                              |
| PROCESSOR                    | <p>Model: Intel Core i5-1235U (ULV)</p> <p>12th Generation Intel Core, code name "Alder Lake-U"</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>Processor cores: total 10</p> <ul style="list-style-type: none"> <li>- Performance Cores: 2 P-Cores (4 Threads) at 1.3 / 4.4 GHz basis/turbo clock</li> <li>- Efficient Cores: 8 E-Cores at 0.9 / 3.3 GHz basis/turbo clock</li> </ul> <p>Smart Cache: 12 MB</p> <p>TDP wattage: 15 W maximum</p> <p>Manufacturing process: Intel 7 (10 nm)</p> <p>Maximum Tjunction Temperature: 100 °C</p> |
| INTEGRATED GRAPHICS          | <p>Intel® Iris® Xe Graphics with 80 Execution Units (EU)</p> <p>Graphics Max Dynamic Frequency: 1.20 GHz</p> <p>Supports up to three independent screens:</p> <ol style="list-style-type: none"> <li>1) Built-in Full-HD display (supports 1080p/60)</li> <li>2) HDMI 2.0b port (supports 1080p/60 and 2160p/60)</li> <li>3) VGA port (supports 1080p/60)</li> </ol>                                                                                                                                                                                                                                                                                          |
| 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 32 MB 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| POWER ADAPTER                | <p>External 90 W power adapter (fanless)<br/> Model FSP090-RBBM1<br/> Medical Safety IEC 60601-1, Meet EN55011 and FCC Class B<br/> Input: 90~264 V AC, 50/60 Hz<br/> Output: 19 V DC, 4.74 A, max. 90 W<br/> DC Connector: 5.5/2.5 mm (outer/inner diameter)<br/> AC mains cable: 3 pins, 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<br/> DOE Energy Efficiency Level VI<br/> No Load Power Consumption = 0.21W<br/> Dimensions: 140 x 71 x 22 mm</p> |
| DC INPUT CONNECTOR           | <p>DC Input Connector: 5.5 / 2.5 mm (outer/inner diameter).<br/> The DC-input of the computer supports 19V±5%.<br/> Optional extended voltage range of 9 to 36V with the Shuttle Accessory <b>VOL01</b>.</p>                                                                                                                                                                                                                                                                                                                                                      |
| MEMORY SUPPORT               | <p>2x SO-DIMM slot with 262 pins<br/> Supports DDR5-4800 (PC5-38400) SDRAM at 1.1 V<br/> Supports Dual Channel mode<br/> Supports a maximum of 32 GB per DIMM, maximum total size: 64 GB</p>                                                                                                                                                                                                                                                                                                                                                                      |
| M.2 SLOT FOR SSDs            | <p>The M.2 2280 M slot provides the following interfaces:<br/> - PCI-Express Gen. 4.0 X4<br/> - SATA v3.0 (max. 6 Gbps)<br/> It supports M.2 SSD cards with a width of 22 mm and a length of 80 or 42 mm (type 2280 or 2242).<br/> Supports M.2 SATA SSDs (with B+M key) and M.2 PCIe NVMe SSDs (with M key)<br/> with auto interface detect</p>                                                                                                                                                                                                                  |
| WEBCAM                       | <p>Integrated Full-HD 2.0 Megapixel (1920 x 1080) camera</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| AUDIO AND SPEAKERS           | <p>Audio Realtek® ALC888S High-Definition Audio<br/> Two analog audio connectors (3.5 mm) on the back panel:<br/> 1) 2 channel line out (headphones)<br/> 2) microphone input<br/> Digital multi-channel audio output: via HDMI<br/> Two Two built-in speakers (2x 2W Stereo)</p>                                                                                                                                                                                                                                                                                 |
| DUAL INTEL 2.5G LAN          | <p>Dual network with RJ45 ports and Intel i226 network chips<br/> (black connector: Intel i226V, yellow connector: Intel i226LM)<br/> Supports 10 / 100 / 1000 / 2500 MBit/s operation<br/> Supports WAKE ON LAN (WOL)<br/> 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<br/> WLAN Controller Realtek RTL8821CE<br/> Supports WiFi IEEE 802.11b/g/n/ac in the 2.4 / 5 GHz band, 1T1R<br/> Supports 20 / 40 / 80 MHz channel bandwidth<br/> Security: supports WPA(-PSK), WPA2(-PSK), WEP 64/128 bit, IEEE 802.11x, IEEE 802.11i<br/> Supports Bluetooth 4.2 in the 2.4 GHz band</p>                                                                                                                                                                                            |
| BACK PANEL CONNECTORS        | <p>Power Button (another button available in an easily accessible place)<br/> HDMI 2.0b (digital video+audio)<br/> D-Sub/VGA (analog video)<br/> 4x USB 3.2 Gen 2 Type A (max. 10 Gbps)<br/> 4x USB 2.0<br/> 2x Intel 2.5G LAN (RJ45, i226V and i226LM)<br/> 1x Serial Port (DB-9/D-sub, RS232)<br/> Microphone input (3.5 mm)<br/> Audio Line-out / Headphones (3.5 mm)<br/> DC-input connector for external power adapter<br/> Potential equalization pin (POAG) according to DIN 42801 including cable</p>                                                     |
| OPTIONAL ACCESSORIES         | <p>- <b>Robust VESA Stand POV21:</b><br/> supports one or two Panel-PCs or Displays with 75x75 or 100x100 mm VESA (max. 21.5" display size and 20 kg total weight).<br/> - <b>Wide Voltage Range VOL01:</b> supports DC-Input 9-36 V DC (instead of 19V only)</p>                                                                                                                                                                                                                                                                                                 |
| ENVIRONMENTAL SPECIFICATIONS | <p>Operating temperature: 0 ~ 40 °C<br/> Storage temperature: -20 ~ 60 °C<br/> Permitted relative humidity: 20 ~ 80 % (non-condensing)</p>                                                                                                                                                                                                                                                                                                                                                                                                                        |

### CONFORMITY AND CERTIFICATIONS

EMC: CE EN60601-1-2:2015+A1:2021, EN IEC61000-3-2:2019+A1:2021, FCC Part 18, FCC/OST MP-5

Safety: cTUVus(ANSI/AAMI ES60601-1:2005/A2:2021), CB(IEC 60601-1:2005/AMD2:2020)

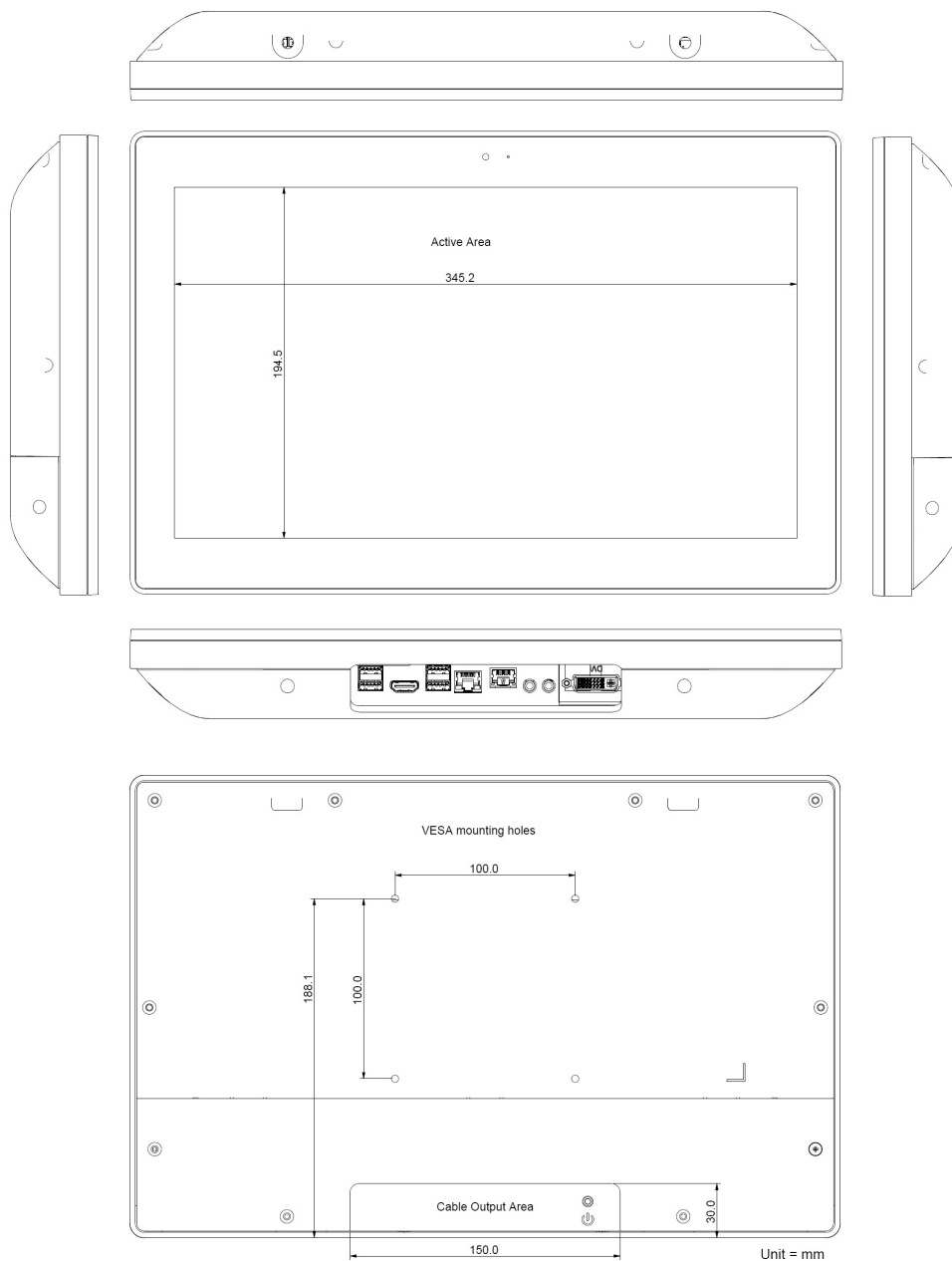
RF: EU, US, Taiwan

This device is classed as a technical information equipment (ITE) in Class A. Class A is for products used in commercial and industrial areas. 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)

## SHUTTLE Panel PC M15AL01-i5 — TECHNICAL DRAWING

Overall dimensions: 394.3 x 256.2 x 48.9 mm (WHD)



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