

# WM646-ADS

R680E  
Q670E

14th/13th/12th Gen Intel® Core™  
Wallmount Box IPC

Desktop

## KEY FEATURES



### Compact ATX IPC System

Based on DFI ADS630-R680E with Standard Memory Height



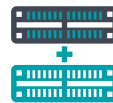
### DDR4

4 DDR4 UDIMM up to 128GB



### Quad Independent Display

VGA + 2 DP++ + HDMI



### Multiple Expansion

1 PCIe x16 (Gen5), 4 PCIe x4 (Gen4),  
2 PCI, 2 M.2 M key, 1 M.2 E Key

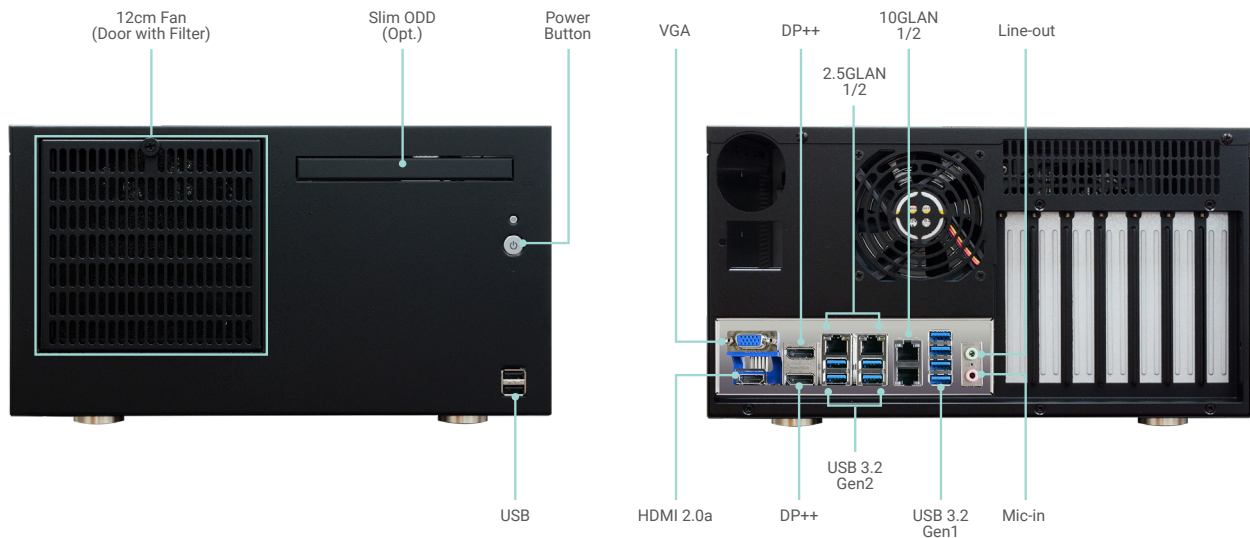


### Rich I/O

2 Intel 10GbE, 2 Intel 2.5GbE,  
USB 3.2 Gen2 (R680E 6x, Q670E 4x),  
USB 3.2 Gen1 (R680E 4x, Q670E 6x), 3 USB 2.0



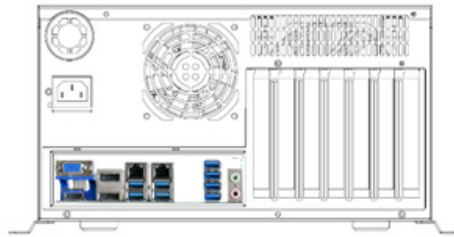
## PANEL



Front View

Rear View

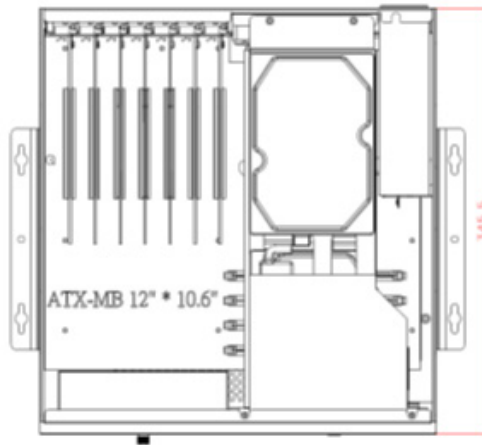
# DIMENSIONS



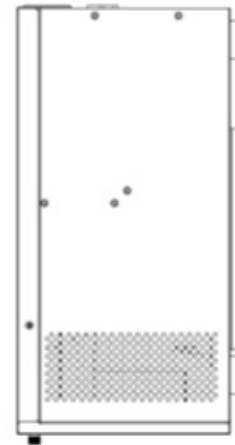
Rear View



Left View



Top View



Right View



Front View

## SPECIFICATION

|                      |                    |   |  |
|----------------------|--------------------|---|--|
| SYSTEM               | <b>Processor</b>   | <p>14th Generation Intel® LGA 1700 Socket Processors</p> <p>Intel® Core™ i9-14900 (24 Cores, 36M Cache, up to 2.0 GHz); 65W<br/>                     Intel® Core™ i9-14900T (24 Cores, 36M Cache, up to 1.1 GHz); 35W<br/>                     Intel® Core™ i7-14700 (20 Cores, 33M Cache, up to 2.1 GHz); 65W<br/>                     Intel® Core™ i7-14700T (20 Cores, 33M Cache, up to 1.3 GHz); 35W<br/>                     Intel® Core™ i5-14500 (14 Cores, 24M Cache, up to 2.6 GHz); 65W<br/>                     Intel® Core™ i5-14500T (14 Cores, 24M Cache, up to 1.7 GHz); 35W<br/>                     Intel® Core™ i5-14400 (10 Cores, 20M Cache, up to 2.5 GHz); 65W<br/>                     Intel® Core™ i5-14400T (10 Cores, 20M Cache, up to 1.5 GHz); 35W<br/>                     Intel® Core™ i3-14100 (4 Cores, 12M Cache, up to 3.5 GHz); 60W<br/>                     Intel® Core™ i3-14100T (4 Cores, 12M Cache, up to 2.7 GHz); 35W<br/>                     Intel® i300 (2 Cores, 6M Cache, up to 3.9 GHz); 46W<br/>                     Intel® i300T (2 Cores, 6M Cache, up to 3.4 GHz); 35W</p> <p>13th Generation Intel® LGA 1700 Socket Processors</p> <p>Intel® Core™ i9-13900E (24 Cores, 36M Cache, up to 5.2 GHz); 65W<br/>                     Intel® Core™ i9-13900TE (24 Cores, 36M Cache, up to 5.0 GHz); 35W<br/>                     Intel® Core™ i7-13700E (16 Cores, 30M Cache, up to 5.1 GHz); 65W<br/>                     Intel® Core™ i7-13700TE (16 Cores, 30M Cache, up to 4.8 GHz); 35W<br/>                     Intel® Core™ i7-13700T (16 Cores, 30M Cache, up to 4.9 GHz); 35W<br/>                     Intel® Core™ i5-13500E (14 Cores, 24M Cache, up to 4.6 GHz); 65W<br/>                     Intel® Core™ i5-13500TE (14 Cores, 24M Cache, up to 4.5 GHz); 35W<br/>                     Intel® Core™ i5-13500T (14 Cores, 24M Cache, up to 4.6 GHz); 35W<br/>                     Intel® Core™ i5-13400E (10 Cores, 20M Cache, up to 4.6 GHz); 65W<br/>                     Intel® Core™ i3-13100E (4 Cores, 12M Cache, up to 4.4 GHz); 65W<br/>                     Intel® Core™ i3-13100TE (4 Cores, 12M Cache, up to 4.1 GHz); 35W<br/>                     Intel® Core™ i3-13100T (4 Cores, 12M Cache, up to 4.2 GHz); 35W</p> <p>12th Generation Intel® LGA 1700 Socket Processors</p> <p>Intel® Core™ i9-12900E (16 Cores, 30M Cache, up to 5.0 GHz); 65W<br/>                     Intel® Core™ i9-12900TE (16 Cores, 30M Cache, up to 4.8 GHz); 35W<br/>                     Intel® Core™ i7-12700E (12 Cores, 25M Cache, up to 4.8 GHz); 65W<br/>                     Intel® Core™ i7-12700TE (12 Cores, 25M Cache, up to 4.6 GHz); 35W<br/>                     Intel® Core™ i5-12500E (6 Cores, 18M Cache, up to 4.5 GHz); 65W<br/>                     Intel® Core™ i5-12500TE (6 Cores, 18M Cache, up to 4.3 GHz); 35W<br/>                     Intel® Core™ i3-12100E (4 Cores, 12M Cache, up to 4.2 GHz); 60W<br/>                     Intel® Core™ i3-12100TE (4 Cores, 12M Cache, up to 4.0 GHz); 35W<br/>                     Intel® Pentium® G7400E (2 Cores, 6M Cache, 3.6 GHz); 46W<br/>                     Intel® Pentium® G7400TE (2 Cores, 6M Cache, 3.0 GHz); 35W<br/>                     Intel® Celeron® G6900E (2 Cores, 4M Cache, 3.0 GHz); 46W<br/>                     Intel® Celeron® G6900TE (2 Cores, 4M Cache, 2.4 GHz); 35W</p> |  |
|                      | <b>Chipset</b>     | Intel® R680E/Q670E Chipset  |  |
|                      | <b>Memory</b>      | Four 288-pin UDIMM up to 128GB<br>Dual Channel DDR4 3200 MHz (ECC support: R680E only)  |  |
|                      | <b>BIOS</b>        | AMI SPI 256Mbit   |  |
|                      | GRAPHICS           | <b>Controller</b>   | Intel® UHD Graphics 700 series   |
| <b>Feature</b>       |                    | OpenGL 4.5, DirectX 12, OpenCL 2.1<br>HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9<br>HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9   |  |
| <b>Display</b>       |                    | 1 x VGA<br>2 x DP++<br>1 x HDMI 2.0a  | VGA: resolution up to 1920x1200 @ 60Hz<br>DP++: resolution up to 4096x2304 @ 60Hz<br>HDMI: resolution up to 4096x2160 @ 24Hz |
| <b>Quad Displays</b> |                    | VGA + 2 DP++ + HDMI   |  |
| STORAGE              | <b>External</b>    | 3 x 3.5" HDD<br>1 x Slim ODD  |  |
|                      | <b>Interface</b>   | 1 x PCIe x16 (Gen5)<br>4 x PCIe x4 (Gen4)<br>2 x PCI<br>1 x M.2 2230 E key (PCIe/USB 2.0/Intel CNVi/Wifi 6E as option, MOQ required)<br>1 x M.2 2242/2260/2280 M key (PCIe x4 NVMe share with PCIe x4 slot#2 as optional, MOQ required)<br>1 x M.2 2242/2260/2280 M key (PCIe x4 Gen3 NVMe/Intel Optane Memory support)   |  |
| AUDIO                | <b>Audio Codec</b> | Realtek ALC888  |  |
|                      | <b>Interface</b>   | 1 x Line-out<br>1 x Mic-in<br>1 x Line-in (opt., MOQ required)  |  |
| ETHERNET             | <b>Controller</b>  | 1 x Intel® I226-LM PCIe (10M/100M/1000Mbps/2.5G) (only Xeon, Core i9/i7/i5 support iAMT)<br>1 x Intel® I226-V PCIe (10M/100M/1000Mbps/2.5G)<br>2 x Intel® x550-AT2 (10 GBASE-T/1 GbE/100 Mbps) (R680E only, no support WOL)   |  |
| FRONT I/O            | <b>LED</b>         | 1 x Power LED<br>1 x HDD LED  |  |
|                      | <b>Button</b>      | 1 x Power Button  |  |
|                      | <b>USB</b>         | 2 x USB (USB 3.0 Optional)  |  |
|                      | <b>ODD</b>         | 1 x Slim ODD (Optional)   |  |
|                      | <b>FAN</b>         | 12cm Cooling-FAN + Door + Filter  |  |

## SPECIFICATION

|                              |                        |   |                         |
|------------------------------|------------------------|---|-------------------------|
| REAR I/O                     | Ethernet               | 2 x 2.5GbE<br>2 x 10GbE (Optional)  |                         |
|                              | USB                    | 4 x USB 3.2 Gen2<br>4 x USB 3.2 Gen1  |                         |
|                              | Display                | 2 x DP++<br>1 x VGA<br>1 x HDMI 2.0a  |                         |
|                              | Audio                  | 1 x Line-out<br>1 x Mic-in  |                         |
| INTERNAL I/O                 | Serial                 | 2 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch)<br>4 x RS-232 (2.54mm pitch)  |                         |
|                              | USB                    | 2 x USB 3.2 Gen2 Key B box header (R680E Gen2 ; Q670E Gen1)<br>2 x USB 2.0 (2.54mm pitch, Colay vertical Type A, opt.: MOQ required)<br>1 x USB 2.0 Vertical Type A |                         |
|                              | Audio                  | 1 x Front Audio Header<br>1 x S/PDIF  |                         |
|                              | SATA                   | 4 x SATA 3.0 (up to 6Gb/s)<br>RAID 0/1/5/10   |                         |
|                              | PS/2                   | 1 x PS/2 (2.54mm pitch)   |                         |
|                              | DIO                    | 1 x 8-bit DIO   |                         |
|                              | SMBus                  | 1 x SMBus   |                         |
| COOLING                      | Fan                    | Front: 1 x 12cm Fan (Door with Filter)<br>Rear: 1 x 8cm Fan   |                         |
| WATCHDOG TIMER               | Output & Interval      | System Reset, Programmable via Software from 1 to 255 Seconds   |                         |
| POWER                        | Supply                 | Flex ATX 350W / 400W / 500W / 650W<br>150x81.5x40.5mm   |                         |
| OS SUPPORT                   | Microsoft              | Windows 10<br>Windows 11  |                         |
|                              | Linux                  | Linux (Ubuntu)  |                         |
| ENVIRONMENT                  | Operating Temperature  | 0 to 45°C   |                         |
|                              | Storage Temperature    | 0 to 60°C   |                         |
|                              | Relative Humidity      | 5 to 95% RH (non-condensing)  |                         |
| MECHANISM                    | Construction           | Sheet metal, SGCC   |                         |
|                              | Mounting               | Wall mount (Optional Wall mount kits)   |                         |
|                              | Dimensions (W x H x D) | 332.0 x 345.50 x 173.0 mm   | 12.67" x 13.60" x 6.82" |
|                              | Weight                 | 6.9 kg  |                         |
|                              | Color                  | Black   |                         |
| STANDARDS AND CERTIFICATIONS | Shock                  | Operating: 3G Non-operating: 5G   |                         |
|                              | Vibration              | Operating: Random 5~500Hz 0.5G Non-operating: Sine 10~500Hz 1.5G  |                         |
|                              | Package Drop           | ISTA Project 1A   |                         |
|                              | Certification          | CE, FCC Class A, RoHS   |                         |