

## OVERVIEW



1. Headphone / mic combo jack (3.5mm) (Note 2) *	6. 4x USB 3.2 Gen 1 (Note 2) *
2. HDMI 1.4	7. Power button
3. 1x CAN BUS and 1x DIO (4DIx4DO) (Note 2) *	8. 2x Serial (RS232 / RS422 / RS485) (Note 2) *
4. microSD card slot (Note 2) *	9. 2x GbE Ethernet (RJ-45, PoE)
5. Micro USB OTG (Note 2) *	10. Slim Tip AC-in or DC-in, AC is shown (Note 3) *

## Notes:

- Items with \* are only available on selected models
- Front ports (audio, microSD card slot, CAN BUS, DIO, micro USB, USB) and rear serial ports are not available for AWS Panorama models (MT 12AE, 12AF, and 12AR)
- Slim Tip AC connector is only for models with AC adapter. Optional DC-in connector is only for 1.6L wide voltage models

## PERFORMANCE

### SOM

#### SOM Processor\*\*

- Nvidia Jetson Xavier NX 8GB
  - 6-cores (3x dual-core CPU clusters), ARM v8.2 64-bit, 1.9GHz Max Frequency, 6MB L2 + 4MB L3 Cache
  - 384-core NVIDIA® Volta GPU with 48 Tensor Cores, 1.1GHz Max Frequency
  - 8 GB 128-bit LPDDR4x, 59.7GB/s
  - 16 GB eMMC 5.1
  - 21 TOPS AI Performance
- Nvidia Jetson Xavier NX 16GB
  - 6-cores (3x dual-core CPU clusters), ARM v8.2 64-bit CPU, 1.9GHz Max Frequency, 6MB L2 + 4MB L3 Cache
  - 384-core NVIDIA Volta GPU with 48 Tensor Cores, 1.1GHz Max Frequency
  - 16 GB 128-bit LPDDR4x, 59.7GB/s
  - 16 GB eMMC 5.1
  - 21 TOPS AI Performance

### Operating System

#### Operating System\*\*<sup>[1]</sup>

- AWS Panorama SKU
  - Linux for Tegra (Ubuntu Desktop 18.04, kernel 4.9, Jetpack v4.4 SDK), with AWS Panorama, OTA
  - Linux for Tegra (Ubuntu Desktop 18.04, kernel 4.9, Jetpack v4.5.1 SDK), with AWS Panorama, OTA, available with OTA patch after December 2022<sup>[2]</sup>
- Generic SKU
  - Linux for Tegra (Ubuntu Desktop 18.04, kernel 4.9, Jetpack v4.5.1 SDK)
  - Linux for Tegra (Ubuntu Desktop 20.04, kernel 5.10, Jetpack v5.0.2 SDK), with OTA, available after December 2022<sup>[3]</sup>

#### Notes:

1. Linux for Tegra with AWS Panorama is for SE70 AWS version only, others are for SE70 Generic version.
2. For AWS Panorama SKU, Jetpack v4.4 version can be update to v4.5.1 via optional OTA.
3. For Generic SKU, if Jetpack v4.5.1 is needed, please contact with Lenovo® local sales to propose via special bid

### Monitor Support

#### Monitor Support

Supports 1 display via onboard HDMI® 1.4

### Chipset

#### Chipset

Nvidia Jetson Xavier NX SOM (System on Module)

### Memory

#### Max Memory

- 8GB LPDDR4x memory on SOM, not upgradable (Nvidia Jetson Xavier NX 8GB models)
- 16GB LPDDR4x memory on SOM, not upgradable (Nvidia Jetson Xavier NX 16GB models)

#### Memory Type

128-bit LPDDR4x 1866 MHz

### Storage

#### Storage Support<sup>[1]</sup>

Up to two drives, 16GB eMMC 5.1 on SOM + 1x M.2 SSD

- M.2 SSD up to 2TB

#### Storage Type\*\*\*

Disk Type	Interface
M.2 2230 SSD	PCIe® NVMe®, PCIe 3.0
M.2 2280 SSD	PCIe NVMe, PCIe 3.0

#### Notes:

1. The storage capacity supported is based on the test results with current Lenovo storage offerings. The system may support larger storage as the technology develops.

## Power Supply

### Power Supply\*\*

Power	Type	Efficiency	Key Features
65W	Adapter	89%	115/230V, 50/60Hz, wide temperature
DC-in connector	Connector only	-	4 pin Phoenix connector, wide voltage 9-48V

## DESIGN

### Mechanical

#### Dimensions (WxDxH)<sup>[1]</sup>

Models	Dimensions
1.6L models	191 x 128 x 65 mm (7.52 x 5.04 x 2.56 inches)

#### Weight<sup>[2]</sup>

Models	Weight
1.6L models	1.857 kg (4.09 lbs)

#### Case Color

Black

#### Mounting\*\*\*

- VESA mount support on chassis (75x75mm / 100x100mm), screw kit included
- (Optional) DIN rail mount bracket kit

Notes:

1. The system dimensions may vary depending on configurations.
2. The system weight is approximate and based on results in Lenovo lab, which varies depending on the source of component, variance of the distribution of each component, and manufacturing process. It may not be the exact weight for each specific model.

## CONNECTIVITY

### Network

#### Ethernet

Dual Gigabit Ethernet (Intel® Ethernet Controller I210-IT), 2x RJ-45, supports POE (802.3af, PSE 15.4W), supports Wake-on-LAN

#### WLAN + Bluetooth®\*\*<sup>[1][2]</sup>

- Intel Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi® + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- No WLAN and Bluetooth

Notes:

1. Bluetooth 5.2 is hardware ready but may run at a lower version due to OS limitations.
2. Intel Wi-Fi 6E AX210 can only support up to Wi-Fi 6 on ThinkEdge SE70, Wi-Fi 6E is not supported due to OS limitation

### Ports<sup>[1]</sup>

#### Front Ports<sup>[2]</sup>

- 4x USB 3.2 Gen 1 (4 ports share 5Gbps bandwidth)
- 1x USB On-The-Go (OTG), USB 2.0 Micro-B, for flashing image only
- 1x headphone / microphone combo jack (3.5mm)
- 1x microSD card slot
- 1x CAN BUS
- 1x HDMI 1.4

- 1x 4-channel DIO (4DI / 4DO)

**Rear Ports**<sup>[3]</sup>

- 2x Serial (RS232 / RS422 / RS485, SDK selectable)
- 2x GbE Ethernet (RJ-45), supports POE (802.3af, PSE 15.4W)
- 1x Slim Tip power connector (for Non-wide temperature models 12NH/12NJ/12NQ/12NR)

## Notes:

1. Front ports (audio, microSD card slot, CAN BUS, DIO, micro USB, USB) and rear serial ports are not available for AWS Panorama models (MT 12AE, 12AF, and 12AR)
2. Digital Input: -- Channels: 4 -- Input type: NPN, PNP -- Dry contact: - Logic 0: Open - Logic 1: Close to GND -- Wet contact (from external power supply): - Logic 0: 0V to 3V - Logic 1: 10V to 50V Digital Output: -- Channels: 4 -- Output type: NPN -- Voltage: 5V to 30V from external power supply -- Current: 500mA / Channel at 25°C, 300mA / Channel at 60°C
3. Slim Tip connector / DC-in connector are mutually exclusive; DC-in connector is only available on 1.6L DC-in models; 2x Serial ports are not available for AWS Panorama models (MT 12AE, 12AF, and 12AR)

## SECURITY & PRIVACY

### Security

**Physical Locks**

Kensington® MicroSaver® lock Slot

## SERVICE

### Warranty

<sup>[1]</sup>**Base Warranty**\*\*

- 1-year courier or carry-in service
- 3-year courier or carry-in service
- No base warranty

## Notes:

1. The warranty upgrades may be bundled with some models, please check the "Included upgrade" column in the specific model's configurations. For more service extensions, please go to <https://smartfind.lenovo.com/>. To learn more details of warranty policy, please access <https://pcsupport.lenovo.com/warranty>.

## ENVIRONMENTAL

### Operating Environment

**Temperature**

- Operating: IEC60068-2-1 Test A: Cold, IEC 60068-2-2 Test B: Dry heat, -20°C (-4°F) to 60°C (140°F), with airflow 0.7m/s (for 1.6L models)
- Storage: IEC60068-2-1 Test A: Cold, IEC 60068-2-2 Test B: Dry heat, -40°C (-40°F) to 85°C (185°F)

**Humidity**

- Relative humidity storage: IEC 60068-2-66 Damp heat, steady state 90%@60°C
- Relative humidity operating: IEC 60068-2-66 Damp heat, steady state 95%@40°C non-condensing

**Shock Protection**

IEC 60068-2-27, shock, operating, 30G / 11ms, half sine

**Vibration Protection**

IEC 60068-2-64, Vibration, Operating, 3Grms, random, 5 ~ 500Hz, 1hr/axis

**MTBF Prediction**

MTBF @60°C / @40°C

**HALT**

HALT testing methodology, LOL / UOL depends on real test result

**Ingress Protection**<sup>[1]</sup>

IP51

## Flowing Mixed Gas Corrosion

IEC 60068-2-60, 25°C/75%RH Gas concentration: H<sub>2</sub>S/0.01ppm, SO<sub>2</sub>/0.2ppm, NO<sub>2</sub>/0.2ppm, Cl<sub>2</sub>/0.01ppm, 21days

### Notes:

1. Need optional IP51 Dust cover kits

## ACCESSORIES

### Bundled Accessories

#### Bundled Accessories

(Optional) IP51 dust cover kits

## CERTIFICATIONS

### Green Certifications<sup>[1]</sup>

#### Green Certifications

- CEL
- JEL
- Low Halogen
- RoHS compliant
- REACH
- WEEE

### Notes:

1. The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration.

### Other Certifications

#### EMC

- FCC for USA
- IC for Canada
- RCM for Australia / New Zealand
- VCCI for Japan
- BSMI for Taiwan
- CCC for China
- CE for Europe
- KCC for Korea

#### Safety

- Ukrsepro for Ukraine
- CM for Morocco
- CB for WW
- CCC for China
- CE LVD for Europe
- BIS for India
- EAC for Russia/Belarus/Kazakhstan/Armenia/Kyrgyzstan
- GS for Germany
- KEBS for Kenya
- KUCAS for Kuwait
- KVALITET for Serbia
- NOM-019 for Mexico
- NRTL (UL/cUL or cTUVus or ETL, cETL) for USA / Canada
- PSB for Singapore
- S mark for Argentina
- SABS for South Africa
- SIRC for Saudi Arabia
- SONCAP for Nigeria
- STZ for Uzbekistan
- TPBY for Belarus
- UKCA for United Kingdom

**RF**

- UKCA for United Kingdom
- WPC for India
- SRRC for China (upcoming)
- SUBTEL for Chile (upcoming)
- TELEC/JATE for Japan
- IC for Canada
- KCC for Korea
- NBTC for Thailand
- NCC for Taiwan
- NOM-208 for Mexico
- NTC for Philippines
- SDPPI for Indonesia
- SIRIM for Malaysia
- ANRT for Morocco
- CE-RED for Europe
- FCC for USA

**Other Certifications**

- Microsoft® Azure for generic version only
- AWS IoT Greengrass for generic version only
- AWS Panorama for AWS version only

- Feature with \*\* means that only one offering listed under the feature is configured on selected models.
- Feature with \*\*\* means that one or more offerings listed under the feature could be configured on selected models.
- Lenovo reserves the right to change specifications or other product information without notice. Lenovo is not responsible for photographic or typographical errors. LENOVO PROVIDES THIS PUBLICATION “AS IS,” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore this disclaimer may not apply to you.
- The specifications on this page may not be available in all regions, and may be changed or updated without notice.

