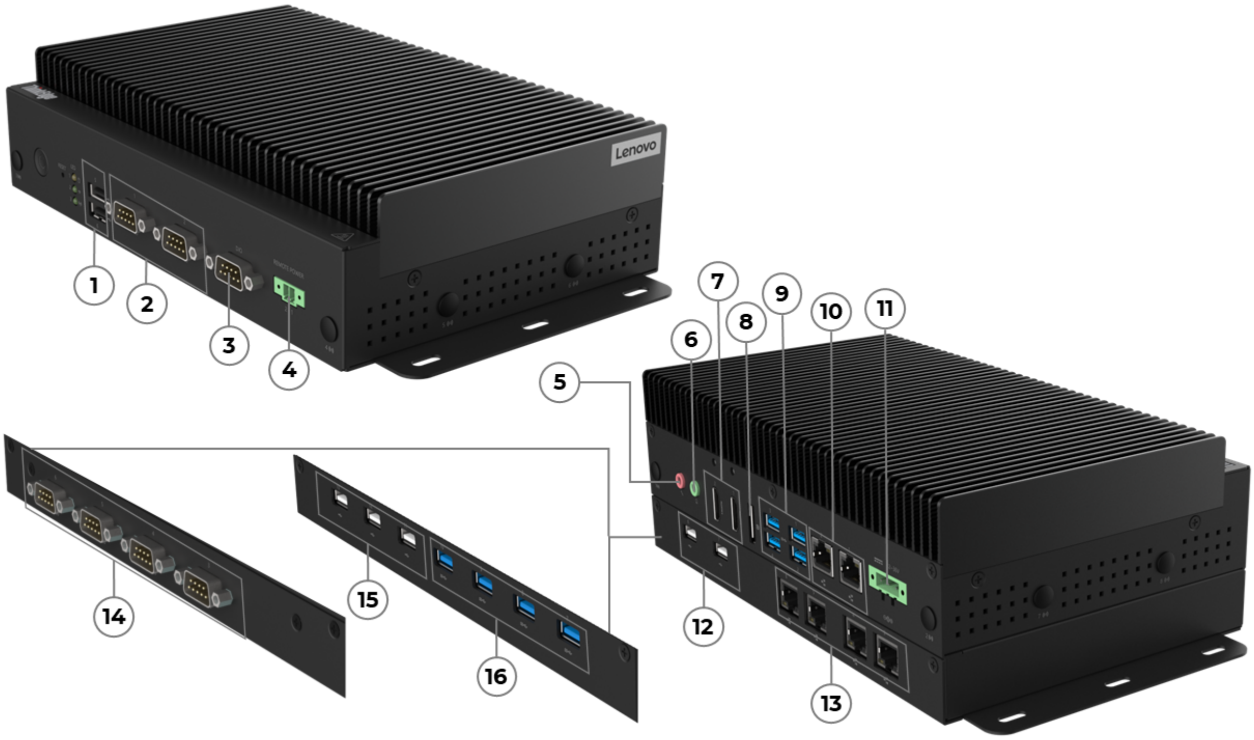
OVERVIEW



1. 2x USB-A (Hi-Speed USB / USB 2.0)	9. 4x USB-A (USB 5Gbps / USB 3.2 Gen 1)
2. 2x serial (RS232/RS422/RS485)	10. 2x 2.5GbE Ethernet (RJ-45)
3. 1x DIO (4DI / 4DO)	11. 1x WDC in 12~36V
4. 1x Remote power switch	12. 2x USB-A (Hi-Speed USB / USB 2.0) *
5. 1x line-out (3.5mm)	13. 4x GbE Ethernet (RJ-45) *
6. 1x microphone-in (3.5mm)	14. 4x serial (RS232 / RS422 / RS485) *
7. 2x HDMI 2.1 TMDS	15. 3x USB-A (Hi-Speed USB / USB 2.0) *
8. 1x DisplayPort++	16. 4x USB-A 3.2 (USB 5Gbps / USB 3.2 Gen 1) *

Notes:

- Items with * are only available on selected models

PERFORMANCE

Processor

Processor Family

- Intel® H Series Core Ultra 5 / 7 Processor (Series 2)
- Intel® H Series Core Ultra 5 Processor (Series 1)

Processor**

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Processor Graphics	NPU	Intel® vPro® Eligibility	Overall TOPS
Core Ultra 5 125H	14 (4 P-core + 8 E-core + 2 LP E-core)	18	P-core 1.2GHz / E-core 700MHz / LP E-core 700MHz	P-core 4.5GHz / E-core 3.6GHz / LP E-core 2.5GHz	18MB Intel® Smart Cache	Intel® Arc™ Graphics	Intel® AI Boost	Intel® vPro® Essentials	Up to 33 TOPs
Core Ultra 5 235H	14 (4 P-core + 8 E-core + 2 LP E-core)	14	P-core 2.4GHz / E-core 1.8GHz / LP E-core 700MHz	P-core 5.0GHz / E-core 4.4GHz / LP E-core 2.5GHz	18MB Intel® Smart Cache	Intel® Arc™ 140T GPU, up to 74 TOPS	Intel® AI Boost, up to 13 TOPS	Intel® vPro® Enterprise	Up to 94 TOPS
Core Ultra 7 265H	16 (6 P-core + 8 E-core + 2 LP E-core)	16	P-core 2.2GHz / E-core 1.7GHz / LP E-core 700MHz	P-core 5.3GHz / E-core 4.5GHz / LP E-core 2.5GHz	24MB Intel® Smart Cache	Intel® Arc™ 140T GPU, up to 75 TOPS	Intel® AI Boost, up to 13 TOPS	Intel® vPro® Enterprise	Up to 97 TOPS

Operating System

Operating System**

- Windows® 11 IoT Enterprise LTSC 2024
- Ubuntu Server 24.04
- Ubuntu Core 24.04
- No preload operating system

Graphics

Graphics**

Graphics	Type	Memory	Max Resolution	Connector	Key Features
Integrated Intel® Arc™ Graphics	Integrated	Shared	4096x2304@60Hz(HDMI®), 4096x2304@60Hz(DP)	2x HDMI® TMDS, 1x DP++	DirectX® 12.2
Intel® Arc™ 140T GPU	Integrated	Shared	4096x2304@60Hz(HDMI®), 4096x2304@60Hz(DP)	2x HDMI® TMDS, 1x DP++	DirectX® 12.2

Monitor Support

Monitor Support

Supports up to 3 independent displays via onboard ports (2x HDMI®, 1x DP++)

Chipset

Chipset

Intel® SoC (System on Chip) platform

Memory

Max Memory

- Standard Temperature (0~50°C): Up to 96GB DDR5-5600 SODIMM
- Wide Temperature (-20~60°C): Up to 64GB DDR5-5600 SODIMM

Memory Slots

Two DDR5 SODIMM slots, dual-channel capable

Memory Type**

- DDR5-5600 SODIMM
- DDR5-5600 SODIMM, wide temperature

Storage

Max Storage Support[1]

- Wide Temperature (-20~60°C):
  Up to two drives, 1x M.2 SATA SSD + 1x M.2 SSD
  • M.2 2280 SSD up to 1TB each
  • M.2 2242 SATA SSD up to 1TB each
- Standard Temperature (0~50°C):
  Up to two drives, 1x M.2 SATA SSD + 1x M.2 SSD
  • M.2 2280 SSD up to 2TB each
  • M.2 2242 SATA SSD up to 1TB each

Storage Type***

Disk Type	Interface	Security
M.2 2242 SSD, wide temperature	SATA 6Gb/s	-
M.2 2242 SSD	SATA 6Gb/s	-
M.2 2280 SSD, wide temperature	PCIe® NVMe®, PCIe® 4.0 x4	-
M.2 2280 SSD	PCIe® NVMe®, PCIe® 4.0 x4	Opal 2.0
M.2 2280 SSD	PCIe® NVMe®, PCIe® 5.0 x4 Performance	Opal 2.0

Notes:

[1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC888S-VD2-GR codec

Power Supply

Power Supply

Power	Type	Efficiency	Key Features
No power adapter	-	-	-
150W	Adapter	89%	150W, for operating temperature 0~40°C 120W, for operating temperature 0~50°C 100W, for operating temperature -20~60°C

DESIGN

Mechanical

Dimensions (WxDxH)[1]

Models	Dimensions
Models with I/O Expansion Module	240 x 150 x 85 mm (9.45 x 5.91 x 3.35 inches)
Models without I/O Expansion Module	240 x 150 x 59 mm (9.45 x 5.91 x 2.32 inches)

Packaging Dimensions (WxDxH)**

- Models with I/O Expansion Module: 415 x 372 x 175 mm (16.34 x 14.65 x 6.89 inches)
- Models without I/O Expansion Module: 425 x 375 x 125 mm (16.73 x 14.76 x 4.92 inches)

Weight[2]

Models	Weight
Models with I/O Expansion Module	Around 2.8 kg (6.17 lbs)
Models without I/O Expansion Module	Around 2.4 kg (5.29 lbs)

Packaging Weight**

- Models with I/O Expansion Module: 4.4 kg (9.7 lbs)
- Models without I/O Expansion Module: Around 3.7 kg (8.16 lbs)

Case Color

Black

Expansion Slots

Three M.2 slots (Key E for WLAN, Key M for SSD, Key B for SATA SSD)

Mounting**

- DIN rail mount bracket kit
- None
- Default with wall mount

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 2.5GbE, (Intel® Ethernet Controller I226-IT), 2x RJ-45, supports Wake-on-LAN, vPro®

WLAN + Bluetooth®[1]

- Intel® Wi-Fi® 6E AX210, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3, M.2 card
- No WLAN and Bluetooth®

Notes:

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

Ports[1]

Front Ports

- 2x USB-A (Hi-Speed USB / USB 2.0)
- 1x remote power switch
- 1x DIO (4DI / 4DO)
- 2x serial (RS232 / RS422 / RS485, BIOS & hardware jumper selectable)

Rear Ports

- 4x USB-A (USB 5Gbps / USB 3.2 Gen 1)
- 2x HDMI® 2.1 TMDS
- 1x line-out (3.5mm)
- 1x microphone-in (3.5mm)
- 2x 2.5GbE Ethernet (RJ-45)
- 1x Dual-Mode DisplayPort™ (DP++)
- 1x 12-36V WDC-in

Optional Rear Ports**

- 4x 1GbE RJ-45 + 2x USB-A (Hi-Speed USB / USB 2.0)
- 4x 1GbE RJ-45, with POE function + 2x USB-A (Hi-Speed USB / USB 2.0)
- 4x USB-A (USB 5Gbps / USB 3.2 Gen 1) + 3x USB-A (Hi-Speed USB / USB 2.0)
- 4x serial (RS232 / RS422 / RS485)
- None

Notes:

[1] The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;

USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB4® 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
USB4® 40Gbps (USB 40Gbps): 40 Gbit/s;
Thunderbolt™ 3/4: 40 Gbit/s.
Thunderbolt™ 5: 80 Gbit/s (bidirectional), up to 120 Gbit/s in bandwidth boost mode for video-intensive applications.

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

BIOS Security

- Administrator password
- Hard disk password
- Secure boot

MANAGEABILITY

System Management

System Management[1]

- Intel® vPro®
- Non-vPro®

Notes:

[1] Not support wireless WiFi Intel® vPro®

SERVICE

Warranty[1]

Base Warranty**

- 1-year courier or carry-in service
- 1-year limited onsite service
- 3-year limited onsite service

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://support.lenovo.com/warrantylookup/warrantypolicy.

ACCESSORIES

Bundled Accessories

Bundled Accessories**

- IP50 dust shield 3.1L
- IP50 dust shield 2.1L
- None

OPERATING REQUIREMENTS

Operating Environment

Temperature

- Operating: IEC60068-2-1 Test Ab: Cold, IEC 60068-2-2 Test Bb: Dry heat, 0°C (32°F) to 50°C (122°F) with 0.7m/s air flow
- Operating: IEC60068-2-1 Test Ab: Cold, IEC 60068-2-2 Test Bb: Dry heat, -20°C (-4°F) to 60°C (140°F) with 0.7m/s air

flow

- Storage: IEC60068-2-3 Test Ca: Damp heat, steady state, -30°C (-22°F) to 70°C (158°F)

Relative Humidity

Relative humidity operating: IEC 60068-2-78 Test:Cab 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 Test Fh, Vibration, Operating, 2Grms, random, 5 ~ 500Hz, 1hr/axis

MTBF Prediction

MTBF @60°C

Ingress Protection

IP50 standard[1]

Notes:

[1] To support IP50, IP50 dust cover kits are needed.

CERTIFICATIONS

Green Certifications

Green Certifications

- GREENGUARD®
- RoHS compliant

Other Certifications

Other Certifications

Red Hat Enterprise Linux Certified

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude] 500.6, High Temperature 501.7, Low Temperature 502.7, Temperature Shock 503.7, Humidity 507.6, Sand and Dust 510.7, Vibration 514.8, Shock 516.8, Fungus 508.8, Solar Radiation 505.7)

- Feature with ** means that only one option listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
- Feature with *** means that one or more options listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
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