Protectli Appliance

Protectli Vault V1410
Intel® Celeron® Processor N5105
4x I226-V 2.5G Ports

September 10th, 2025

Overview

The Protectli Vault V1410, features the Intel® Celeron® Processor N5105 with 8GB soldered (fixed) DDR4 memory and 32GB onboard eMMC. It also includes three additional M.2 slots for optional NVMe SSD storage, WiFi, and LTE modules. The V1410 is equipped with four Intel® I226-V RJ-45 Ethernet ports, supporting up to 2.5 Gigabit ethernet connectivity with backwards compatibility.

Protectli Vaults utilize Intel components ensuring persistent compatibility with a wide range of operating systems (OS) and applications. The "V" series Vaults feature a fanless, all-aluminum chassis design, allowing for efficient heat dissipation from the CPU and other components without any moving parts or additional power requirements.

Technical Specifications

Model	V1410
Description	4x 2.5G Network Port Fanless Appliance
Processor	Intel® Celeron® Processor N5105 (64 Bit, 2.0GHz, Turbo 2.9GHz, 4M L3 Cache)
Processor Cores	4
Processor Threads	4
Processor Capabilities	AES-NI
	Intel® Vt-x, Vt-d
Network	4x Intel® I226-V 2.5G Ethernet, RJ-45
Video / Graphics	Intel® UHD Graphics, 1x HDMI 2.0
Audio	Audio over HDMI
Memory	1x 8GB LPDDR4-2933, Soldered
Onboard Storage	1x M.2 2280 NVMe, 1x 32G eMMC on board
Optional Additional Storage	Not Supported
External I/O	1x Reset Button (Recessed), ACPI
	1x Power Button with LED (Blue)
	4x USB 3.2 Gen 1 Type-A ports
	1x HDMI 2.0 port
	1x Micro (3FF) SIM Holder
	1x 12V DC Power Jack, Threaded
	4x RJ-45 Ethernet ports

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	1x USB Type-C COM Port
	1x Power LED (Green)
	1x Data Activity LED (Red)
Internal I/O	1x M.2 3052 B-Key USB 3.2 Gen 1 (LTE)
	1x M.2 2280 M-Key PCIe 3.0 x1 (NVMe)
	1x Front Panel Header (2x5 pin, 2.54mm pitch)
	1x M.2 2230 Key E PCIe 3.0 x1 (WiFi)
	1x CPU Fan Header (4 pin) (1.25mm pitch)
	1x SPI Header (2x3 pin, 2.54mm pitch, +3.3V)
	1x Buzzer
	1x CMOS Reset (3 pin, 2.54mm pitch)
	1x CMOS Battery (CR1220, 3V)
BIOS	AMI® or coreboot
Indicators	1x LED Power Button (Blue), 1x LED Power Indicator (Green), 1x LED Disk Activity Indicator (Red)
Power	1x Power brick with locking collar (12V DC Input)
Power Usage	Max 27W
Chassis	Fanless, Aluminum, Gray
Chassis Dimensions	w/ feet: 5.6 x 4.8 x 2.3in. (142.1 x 121.0 x 57.7mm) w/o feet: 5.6 x 4.8 x 2.1in. (142.1 x 121.0 x 55.1mm)
Mounting Options	Desktop, Optional VESA Bracket, Optional 1RU Rack Mount
Weight	2lb 3oz, 0.99kg
Shipping Weight	3lb 7.4oz, 1.57kg
Operating Temperature	+14° - +122° F, -10° - +50° C
Operating Humidity	0 – 95% relative humidity, non-condensing
Approvals	UL (Power Supply), FCC Part 15 Class B, CE, RoHS
Country of Origin	Made in China, Assembled in USA, Canada, or Germany
Optional Connectivity	1x WiFI, 1x LTE

Included Accessories and Components

48W Power Supply Wall Wart with interchangeable US/CA, UK, EU, and AU/NZ plugs

USB Type-A (with Type-C adapter) to USB Type-C Serial Console Cable

Bag of spare chassis screws

Set of thermal pad(s)

Quick Start Guide

External Interfaces

Front Panel Configuration
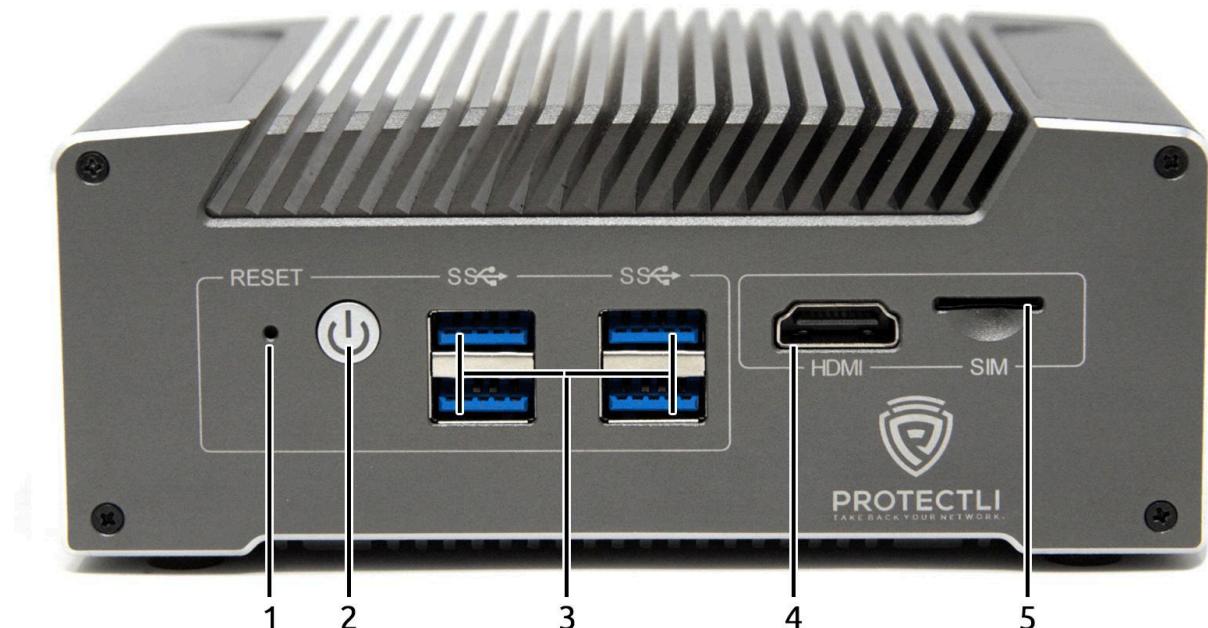
Item #	Object	Label	Description
1	Reset Button (Recessed)	RESET	An ACPI reset button.
2	Power Button	⏻	Pressing the Power Button will power the unit on and illuminate with a blue LED. *In OSes configured to handle ACPI signals, pressing the power button initiates a shutdown.* *Pressing and holding the Power Button for 5 seconds will force the unit to power off.*
3	USB Type-A Ports	SS⟷	Four USB 3.2 Gen 1[†] Type-A ports. (Maximum theoretical throughput of 5000Mbps [~500MBps])
4	HDMI Port	HDMI	Video and audio output via HDMI 2.0.

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Item #	Object	Label	Description
5	Onboard Micro (3FF) SIM Slot	SIM	Access to an onboard Micro (3FF) SIM slot for providing a SIM card to an optional internal cellular modem.

[†]USB-IF naming standard for USB transfer rates: "USB 3.2 Gen 1" is the equivalent and current name for "USB 3.2 Gen 1", "USB 3.1 Gen 1", and "USB 3.0". Older kernels and operating systems may not report the most recent naming convention. For a full linguistic deep dive, please see 3.1 and 3.2 Specification Language Usage Guidelines from USB-IF. https://www.usb.org/sites/default/files/usb_3_2_language_product_and_packaging_guidelines_final.pdf, https://www.usb.org/sites/default/files/usb_3_1_language_product_and_packaging_guidelines_final_0.pdf

Rear Panel Configuration
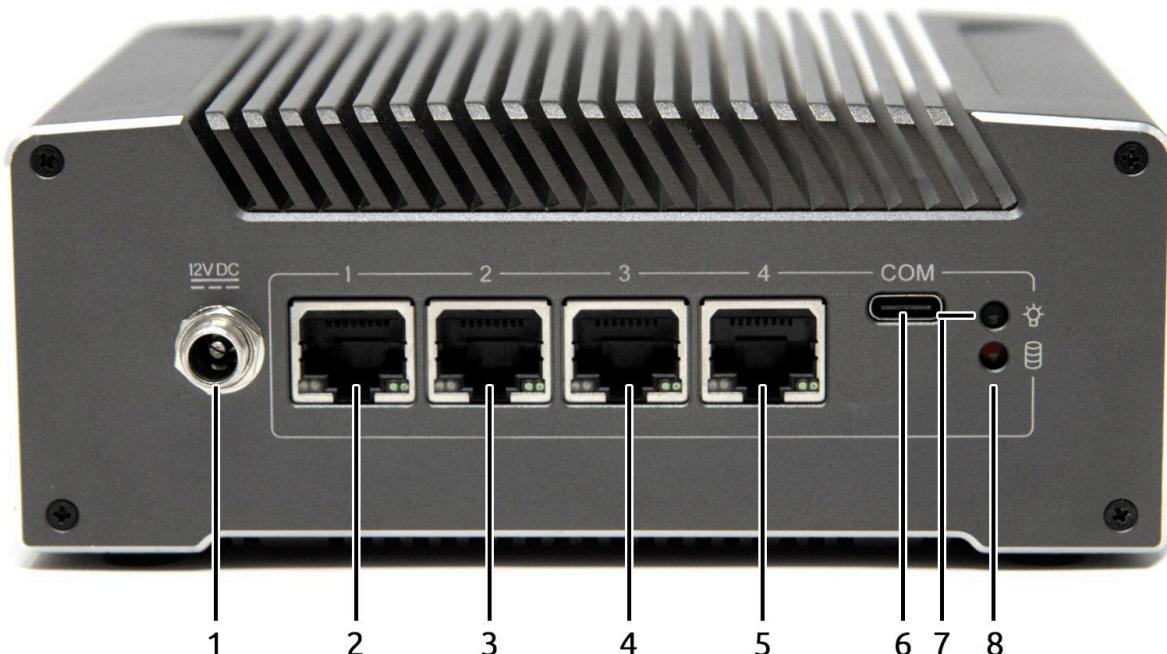
Item #	Object	Label	Description
1	Power Supply Connector	12V DC ---	12V DC locking collar connector for the included 48W external power supply. Positive rail is the tip, negative is sleeve. Barrel dimensions: 5.5mm x 2.5mm

| Item #	Object	Label	Description
2	Ethernet Ports	1, 2, 3, 4	Four (4) 10/100/1000/2500 Mbps Intel® I226-V ethernet ports. The bottom right LED emits solid green when connected at any speed.
3	Type-C Serial Console Port	COM	RS-232 serial communications via FTDI FT232RQ UART, exposed through USB 2.0 Type C connector. Default port settings: ● 115200 baud ● No parity ● 8 databits ● 1 stopbit
4	Power Indicator LED	💡	LED emits solid green when the device is powered on.
5	Data Activity LED	🗄	LED emits red when data activity is detected over the NVMe interface.

Side Panel Features

Item #	Object	Label	Description
1	Antenna Ports	((•))	Six antenna ports, three on the left and three on the right of the unit, for mounting radio antennas (e.g. WiFi, LTE). The ports are covered by plugs while not in use.
2	Kensington Security Slot	🔒	A standard anti-theft locking slot, Kensington Security Lock compatible.

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Internal Interfaces

Motherboard Layout and Pin Configuration
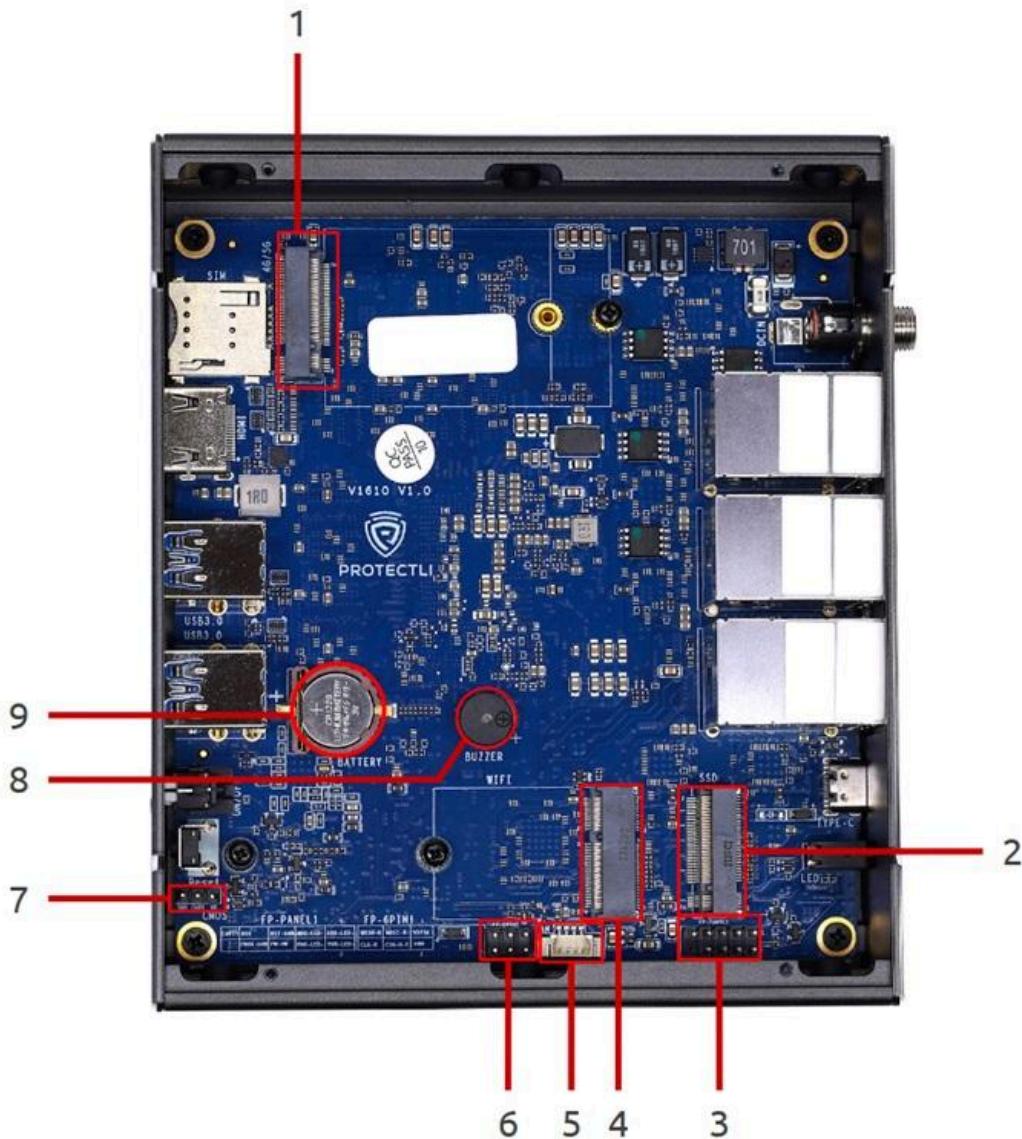
Item #	Object	Label	Description
1	LTE Expansion Connector	4G/5G	M.2 3052 B-Key connector for a LTE module uses USB 3.2 Gen 1 protocol. It is designed for Protectli LTE modules, but is not limited in its capabilities.

Item #	Object	Label	Description
2	M.2 NVMe SSD Connector	SSD	M.2 2280 M-Key connector for a M.2 NVMe SSD uses PCIe 3.0 x1 protocol. It is designed for an NVMe storage device, but is otherwise a functional one-lane PCIe port.
3	Front Panel Header	FP-PANEL1	Front panel header (2x5, 2.54mm pitch) for adding external device controls and indicators featured through the front panel, such as power button, reset button, activity LEDs, etc. Pin numbering oriented to the motherboard image:

<table>
<tr><td>9</td><td>7</td><td>5</td><td>3</td><td>1</td></tr>
<tr><td>EMPTY</td><td>RSR</td><td>RST-GND</td><td>HDD-LED-</td><td>HDD-LED+</td></tr>
<tr><td>KEY</td><td>PWON-GND</td><td>PW-ON</td><td>PWR-LED-</td><td>PWR-LED+</td></tr>
<tr><td>10</td><td>8</td><td>6</td><td>4</td><td>2</td></tr>
</table>

Item #	Object	Label	Description
4	WiFi Expansion Connector	WIFI	M.2 2230 Key E connector for a WiFi module uses PCIe 3.0 x1 protocol. It is designed for Protectli WiFi modules, but is not limited in its capabilities.
5	CPU Fan Header	FAN	Four-pin (1x4, 1.25mm pitch) Molex PicoBlade-compatible header for an optional fan.
6	SPI Header	FP_6PIN1	SPI header (2x3, 2.54mm pitch, +3.3V) for BIOS programming. Pin numbering oriented to the motherboard image:

<table>
<tr><td>5</td><td>3</td><td>1</td></tr>
<tr><td>MISO-R</td><td>MOSI-R</td><td>V3P3A</td></tr>
<tr><td>CLK-R</td><td>CSO-N-R</td><td>GND</td></tr>
<tr><td>6</td><td>4</td><td>2</td></tr>
</table>

Item #	Object	Label	Description
7	NVRAM Reset Jumper	RESET	CMOS reset pins (1x3, 2.54mm pitch). Shorting the jumper pins GND and CMOS while the CMOS battery is connected will reset the BIOS NVRAM. Pin numbering oriented to the motherboard image:

<table>
<tr><td>3</td><td>2</td><td>1</td></tr>
<tr><td>GND</td><td>CMOS</td><td>NC</td></tr>
</table>

https://protectli.com/product/v1410/

Item #	Object	Label	Description
8	Buzzer	BUZZER	A compact PC speaker designed for alerts. Alert types are dependent on the operating system.
9	CMOS Battery	BATTERY	Small lithium battery that provides backup power to the CMOS chip. Holds a CR1220 3V battery.

Dimensions View

Document History

2025-09-10
- Changed "4FF SIM" to "3FF SIM" to accurately reflect the size of the SIM slot

2025-01-22
- Added further information regarding USB speeds
- Added LED behavior for NICs
- Changed pitch of CPU Fan Header to 1.25mm to accurately reflect the pitch

2024-11-08
- Complete redesign for layout consistency.
- Renamed sections for improved readability.
- Inclusion of 'Overview' section
- Updated specification table for clarity and specificity
- New callouts added to highlight key specifications and features
- Updated images

2024-10-24
- Unified spacing throughout document
- Updated linked spec sheet to include coreboot availability
- Clarified wording throughout "System Features" section
- Corrected USB versions from "USB 3.2 Gen 2" to "USB 3.2 Gen 1"

2024-08-01
- Changed "PC Speaker" to "PC speaker"
- Changed "RS232" to "RS-232"
- Updated linked spec sheet with ® and ™ as necessary for Intel and AMI
- Updated linked spec sheet from "4FF SIM" to "Nano (4FF) SIM"

2024-06-28
- Initial document

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