

# Protectli Appliance

Protectli Vault Pro VP2420 4 Port 2.5G -  
Intel® J6412

August 31, 2023

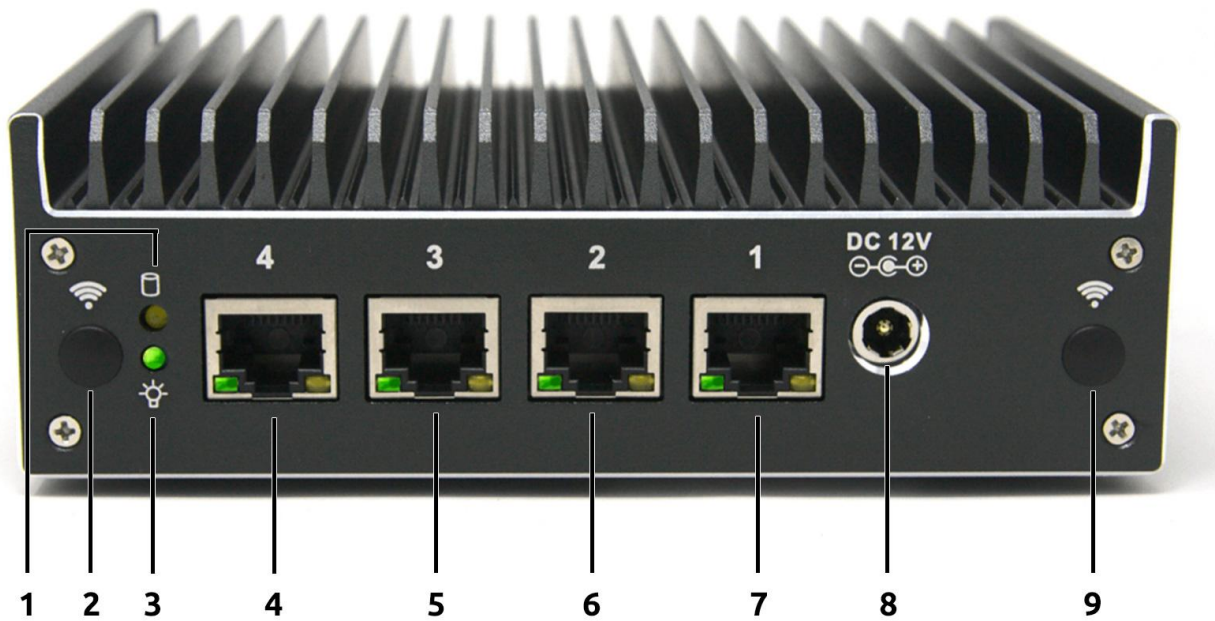
# Specifications

<b>Model</b>	VP2420
<b>Description</b>	4x 2.5G Network Port Fanless Appliance
<b>Processor</b>	Intel J6412 (64 Bit, 2.0 GHz Base, 2.6 Burst, 1.5M Cache)
<b>Processor Cores</b>	4
<b>Processor Threads</b>	4
<b>Intel AES-NI</b>	Supported
<b>Virtualization</b>	Intel Vt-x
<b>Network</b>	4x Intel I225-V Rev. B3 2.5G Ethernet, RJ-45
<b>Video / Graphics</b>	Intel UHD Graphics for 10th Gen, 1x HDMI 1.4, 1x DP 1.4
<b>Audio</b>	Audio over HDMI
<b>Memory</b>	1x SO-DIMM DDR4-3200, Max 32G
<b>Storage</b>	1x M.2 SATA, 1x 16G eMMC on board
<b>Optional Storage</b>	1x Internal 2.5" SATA 3.0 SSD
<b>External I/O</b>	4x RJ-45 Ethernet 2x USB 3.0 Type A 1x USB-C 3.2 Type C 1x USB Micro 2.0 (Console) 1x HDMI 1x Display Port 1x 4FF SIM Holder 6x WiFi/LTE Antenna Mounting Holes 1x 12V DC Power Jack
<b>Internal I/O</b>	1x M.2 2280-M for SATA 1x SATA Header, 1x SATA Power 1x M.2 2230 E-Key PCIe 3.0 x1 for WiFi 1x M.2 B+E-Key PCIe x1 and USB 3.0 for WiFi or 5G, accommodates 30x42mm and 30x52mm 1x USB 2.0 Header 1x Trusted Platform Module Header (9 pin) 1x CMOS Reset (2 pin) 1x CPU Fan Header (4 pin)

	1x Front Panel Header (9 pin)
<b>BIOS</b>	AMI or coreboot
<b>Indicators</b>	1x LED Power Button (Blue), 1x LED Power Indicator (Green), 1x LED Disk Activity Indicator (Red), 1x LED Disk Activity Indicator (Yellow)
<b>Power</b>	Input 12V DC, 1x DC Power Jack, Screw in connector
<b>Power Usage</b>	Max 24W
<b>Chassis</b>	Fanless, Aluminum, Gray
<b>Chassis Dimensions</b>	5.75 x 5 x 2 in, 146 x 127 x 50 mm
<b>Mounting Options</b>	Desktop, VESA Bracket, Optional 1RU Rack Mount
<b>Weight</b>	1 lb 12 oz, .80 Kg
<b>Shipping Weight</b>	3 lbs 4 oz, 1.47 Kg
<b>Operating Temperature</b>	+14° - +122° F, -10° - +50° C
<b>Operating Humidity</b>	0 – 95% relative humidity, non-condensing
<b>Approvals</b>	UL (Power Supply), FCC Part 15 Class B, CE, RoHS
<b>Country of Origin</b>	Made in China, Assembled in USA
<b>Optional WiFi</b>	1x M.2 2230 E-Key PCIe 802.11ac/a/b/g/n (PCIe)
<b>Optional LTE Cellular</b>	1x M.2 3052 B-Key USB 3.0 (LTE), with 4FF SIM holder

# System Features

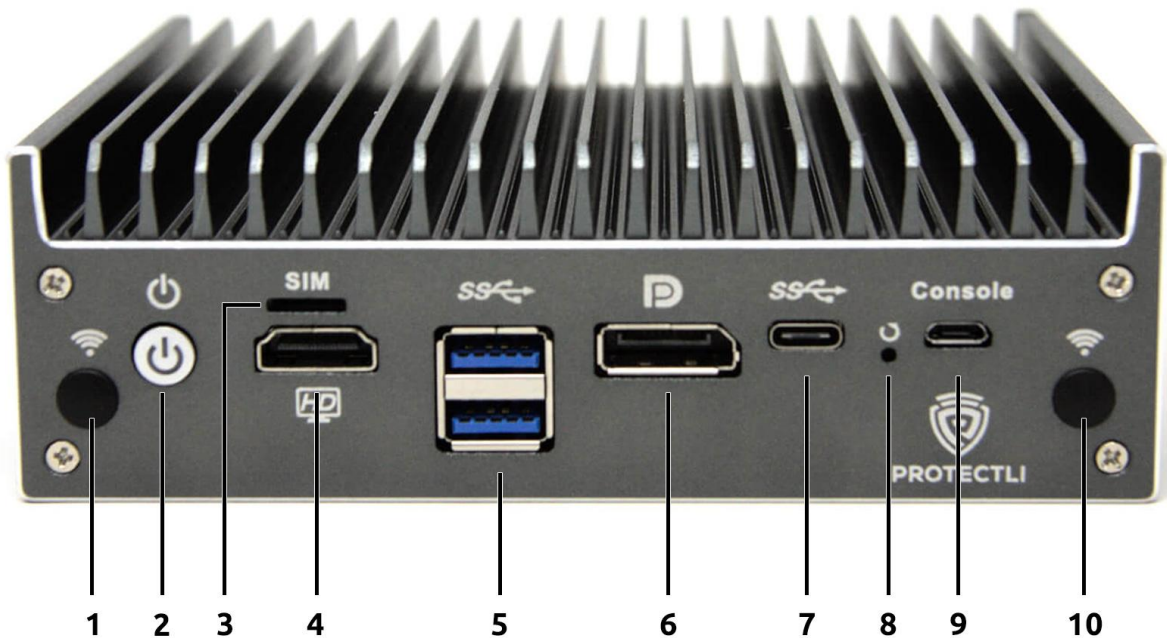
## Front Features



Item #	Object	Description
1	HDD Activity LED	This amber LED will light up when data activity is detected on either the mSATA or SATA interfaces.
2, 9	Antenna Ports	Two antenna ports for adding radio antennas (WiFi, LTE, etc.). The ports are covered by plugs while not in use.
3	Power Indicator LED	This LED will stay solid green when the device is powered on.
4	Ethernet Port 4	The fourth 10/100/1000/2500 Mbps Intel® i225 ethernet port.
5	Ethernet Port 3	The third 10/100/1000/2500 Mbps Intel® i225 ethernet port.

6	Ethernet Port 2	The second 10/100/1000/2500 Mbps Intel® i225 ethernet port.
7	Ethernet Port 1	The first 10/100/1000/2500 Mbps Intel® i225 ethernet port.
8	Power Supply Connector	12V DC barrel connector for the 40W external power supply. Positive rail is the tip, negative is sleeve.

## Rear Features

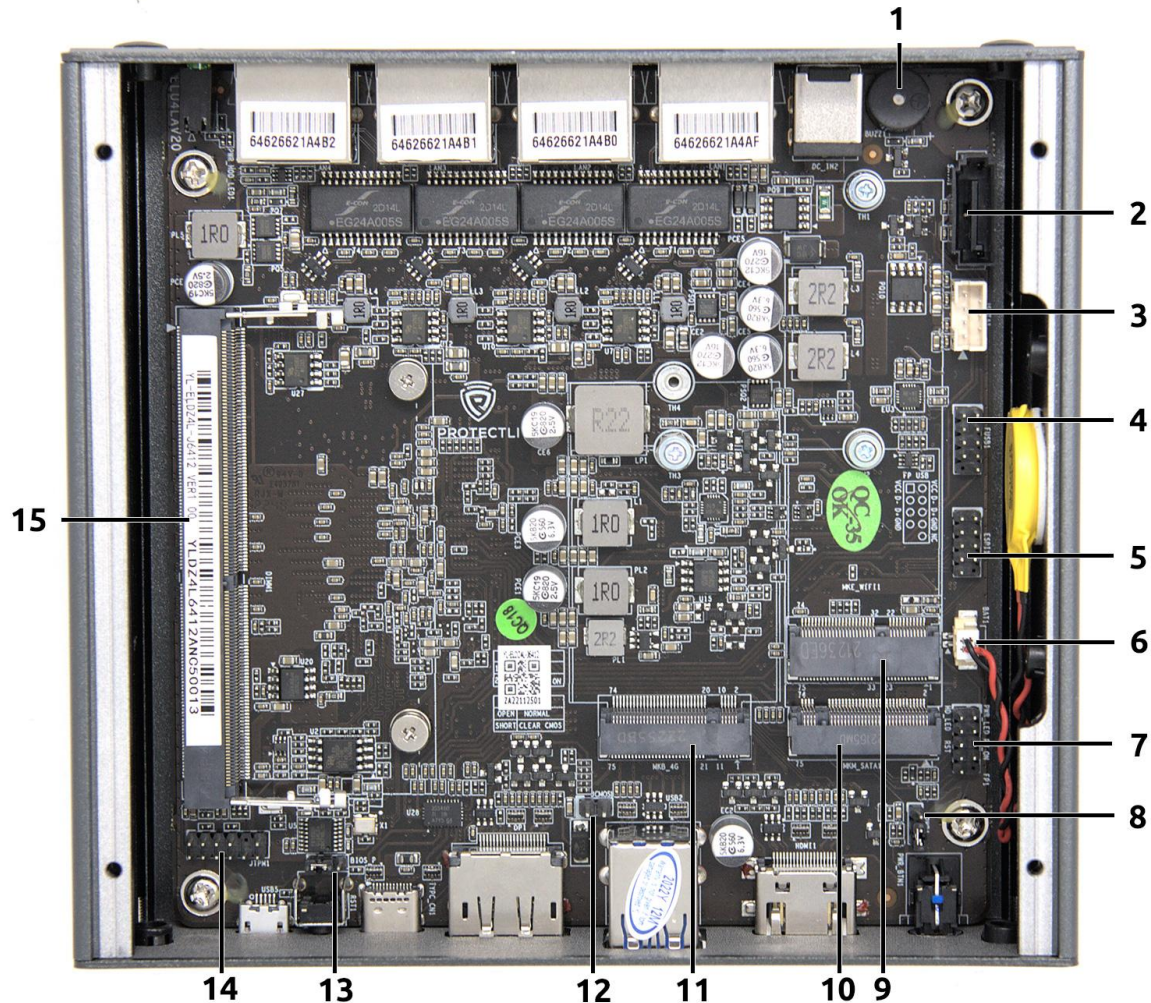


Item #	Object	Description
1, 10	Antenna Ports	Two antenna ports for adding radio antennas (WiFi, LTE, etc.). The ports are covered by plugs while not in use.
2	Power Button	Pressing the Power Button will power the unit on and illuminate with a blue LED.  <i>In OSes configured to handle ACPI signals, pressing the power button initiates a shutdown.</i>

		<i>Pressing and holding the Power Button for 5 seconds will force the unit to power off.</i>
3	SIM Slot	Nano SIM slot for providing a SIM card to an optional internal cellular modem.
4	HDMI Connector	Video and audio output via HDMI.
5	Two USB3 Connectors	USB 3.0 Type-A connectors.
6	DisplayPort Connector	Video output via DisplayPort.
7	USB-C Connector	USB 3.0 Type-C connector.
8	Reset Button (Recessed)	A momentary switch exposed via GPIO. This is not an ACPI reset button, but a general purpose button that may be programmed in the guest OS.
9	Serial Console Port	RS232 serial communications via UART exposed through USB 2.0 Type B Micro connector. Default port settings: <ul style="list-style-type: none"> <li>● 115200 baud</li> <li>● No parity</li> <li>● 8 databits</li> <li>● 1 stopbit</li> </ul>



## Motherboard Top View



Item #	Object	Label	Description
1	Buzzer	BUZZ1	PC Speaker.
2	SATA Data Connector	SATA1	SATA III data connector. Recommended for additional storage, such as a 2.5" SATA SSD.
3	SATA Power Connector	JSATA1	SATA power connector for additional storage.
4	USB 2.0 Header	FUSB1	Internal header for additional USB 2.0 connections.
5	eSPI Header	ESPI1	eSPI Header for eSPI peripherals.

6	CMOS Battery Header	BAT1	3V CR2032 connected via 2-pin connector.
7	Front Panel Header	FP1	Internal header for adding external device controls and indicators featured through the front panel, such as power button, reset button, activity LEDs, etc.
8	Power Restore Jumper	JPWR1	Jumper setting determines system state after power loss. Shorting the two pins nearest to the power button (towards the bottom in the reference photo), the unit will automatically power on when power is restored after an outage.
9	PCI Wireless Expansion Slot	MKE_WIFI1	Connector provides PCIe 3.0 x1 over an M.2 E-keyed slot. Designed for Protectli WiFi and LTE modems, but is not limited in its capabilities.
10	M.2 Storage Connector	MKM_SATA1	Connector for an M.2 M-keyed SATA 3.0 storage device, such as an SSD. <i>Not compatible with NVMe storage technology.</i>
11	USB Wireless Expansion Slot	MKB_4G	Connector provides USB 3.0 over an M.2 B-keyed slot. Designed for Protectli LTE modems, but is not limited in its capabilities.
12	NVRAM Reset Jumper	JCMOS1	Shorting this jumper while the CMOS battery is connected will reset the BIOS NVRAM.
13	BIOS Write Protection	BIOS_P	Jumper setting enables BIOS flash write protection. Shorting the two pins nearest the TPM Header (diagram item #14) disables write protection. Shorting the two pins furthest from the same TPM Header will prevent write operations to the BIOS. <i>In order to flash newer or different BIOS (such as switching from AMI to coreboot), BIOS Write Protection must be <b>disabled</b>.</i>
14	TPM Header	JTPM1	Trusted Platform Module header for TPM1.2 and TPM2.0 hardware devices.
15	Memory Slot	DIMM1	DDR4LP SODIMM.

## Right Features

Item #	Object	Description
1	Antenna Ports	Two antenna ports for adding radio antennas (WiFi, LTE, etc.). The ports are covered by plugs while not in use.



## Measurement View



## Document History

2023-08-31

- Fix incorrectly stated chassis color (black => gray).
- Clarify details about the i225-V network interfaces.

2023-05-01

- Fix incorrectly stated maximum DIMM size (16GB => 32GB)

2023-03-21

- Initial document