Protectli Appliance

Protectli Vault FW6Br2

6 Port 1GbE - Intel® i5-7200U

February 4th, 2025

© 2025 Protectli. All Rights Reserved.

Overview

The Protectli Vault FW6C is the Intel® core® i5-7200U processor variant of the FW6 Series, with support for up to 64GB dual DDR4 RAM and support for both mSATA and 2.5” SSD storage. This Vault is equipped with six 1GB Intel® I211 ethernet ports, programmable for your specific use case. Internally, the FW6 series includes a keyed connector for an optional Wi-Fi card and can support an external LTE modem.

Protectli Vaults utilize Intel components ensuring persistent compatibility with a wide range of operating systems (OS) and applications. The "FW" 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	FW6C
Description	6X 1G Network Port Fanless Appliance
Processor	Intel® Core™ i5-7200U (64 Bit, 2.5 GHz, 3.1 GHz Turbo, 3MB Smart Cache)
Processor Cores	2
Processor Threads	4
Intel® AES-NI	Supported
Virtualization	Intel® Vt-x, Vt-d
Network	6x Intel® 1G Ethernet, RJ-45
Video / Graphics	Intel® UHD Graphics 620, 1x HDMI 1.4
Audio	Audio over HDMI
Memory	2x SO-DIMM DDR4-2133 1.2v, Dual Channel , Max 64GB
Storage	1x mSATA
Optional Storage	1x Internal 2.5” SATA 3.0 SSD
External I/O	6x RJ-45 Ethernet
	4x USB 3.2 Gen 1 Type-A ports
	1x HDMI
	1x RJ-45 COM
	2x WiFi/LTE Antenna Mounting Holes
	1x 12V DC Power Jack
Internal I/O	1x Mini PCIe for mSATA
	1x SATA Header, 1x SATA Power
	1x Half Height mPCIe (PCIe 3.0x1) for WiFi

© 2025 Protectli. All Rights Reserved.

	1x SATA Header
	1x CMOS Reset (2 pin)
	1x CPU Fan Header (4 pin)
	1x Front Panel Header (9 pin)
Super I/O Chip	IT8613E
BIOS	AMI® or coreboot
Indicators	1x LED Power Button (Blue), 1x LED Power Indicator (Green), 1x LED Disk Activity Indicator (Red), 1x LED Disk Activity Indicator (Yellow)
Power	Input 12V DC, 1x DC Power Jack
Power Usage	Max 45W
Chassis	Fanless, Aluminum, Black
Chassis Dimensions	6.1 x 5 x 2 in, 155 x 127 x 50 mm
Mounting Options	Desktop, VESA Bracket, Optional 1RU Rack Mount
Weight	2 lbs 4 oz, 1.0 kg
Shipping Weight	3 lbs 12 oz, 1.7 kg
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

Included Accessories and Components

60W Power Supply with barrel connector

US/CA Power Cable *(Other regional power cables available)*

RJ45 to DB-9 Console Cable

4x SSD mounting screws

1x SATA power cable

1x SATA data cable

4x Component screws

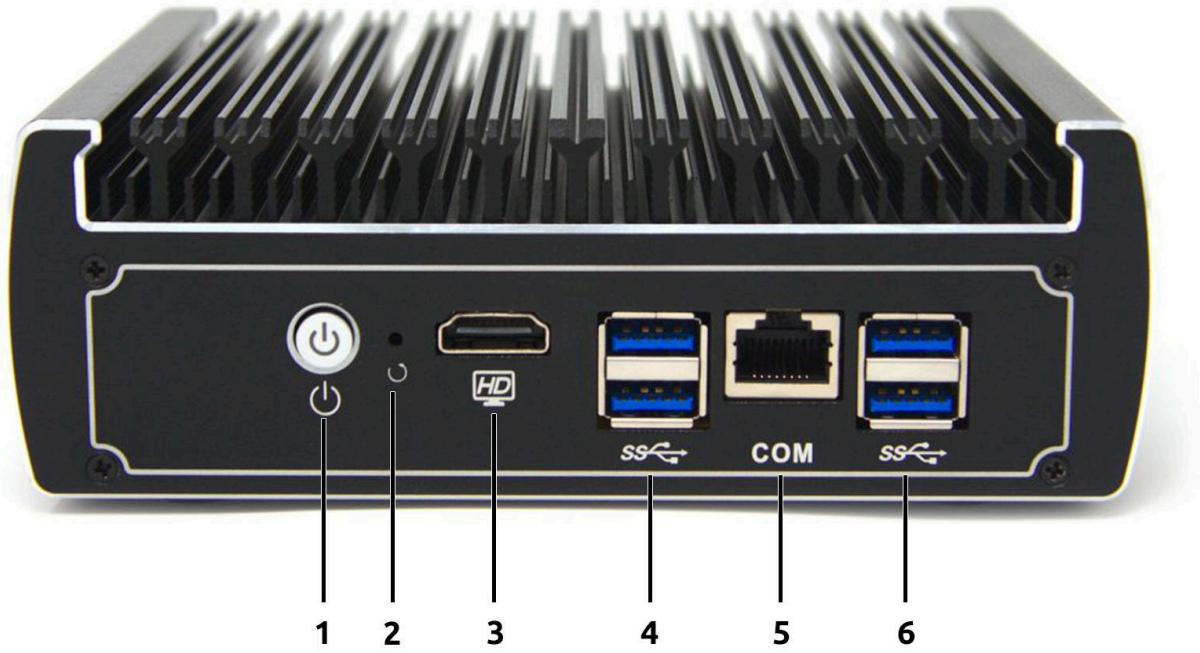
VESA Bracket mount with hardware

Quick Start Guide

© 2025 Protectli. All Rights Reserved.

External Interfaces

Front Panel Configuration



Item #	Object	Label	Description
1	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.*
2	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.*

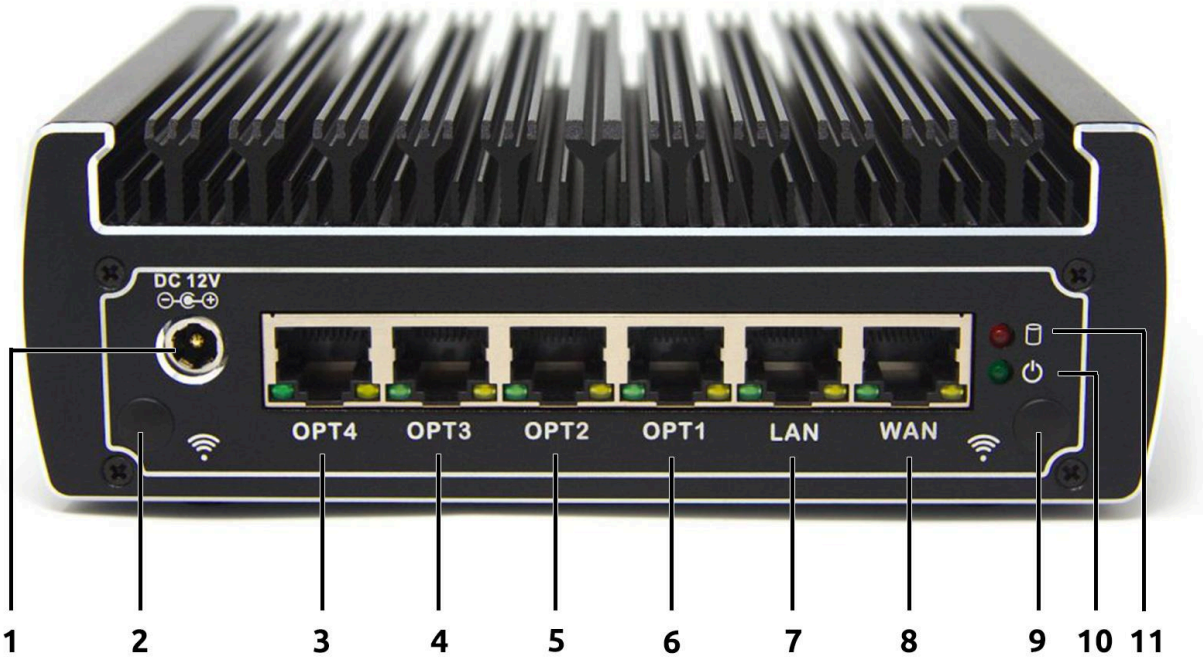
© 2025 Protectli. All Rights Reserved.

3	HDMI Connector	HD	Video and audio output via HDMI. Audio output will not work when utilizing coreboot firmware.
4,6	USB3 Connectors	SS	USB 3.2 Gen 1† Type-A connectors. (Theoretical maximum throughput of 5Gbps [~500MBps])
5	Serial Console Port	**COM**	RS-232 serial communications via RJ-45. Default port settings: ● 115200 baud ● No parity ● 8 databits ● 1 stopbit

†USB-IF naming standard for USB transfer rates: "USB 3.2 Gen 1" is the equivalent and current name for "USB 3.1 Gen 1" offering a theoretical maximum speed of 5 Gigabits (~500MBps) per second. 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

© 2025 Protectli. All Rights Reserved.

Rear Panel Configuration



Item #	Object	Label	Description
1	Power Supply Connector	**DC 12V** ⊖—◎—⊕	12V DC barrel connector for the 60W external power supply. Positive rail is the tip, negative is sleeve.
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	Ethernet Port 6	**OPT4**	The sixth 10/100/1000 Mbps Intel® i211 ethernet port. This port is labeled “OPT4” for convenience, but is not limited in its capacity. Bottom left LED emits solid Green at 1000/100Mbps, and is turned off at 10Mbps.
4	Ethernet Port 5	**OPT3**	The fifth 10/100/1000 Mbps Intel® I211 ethernet port. This port is labeled “OPT3” for convenience, but is not limited in its capacity. Bottom left LED emits solid Green at 1000/100Mbps, and is turned off at 10Mbps.
5	Ethernet Port 4	**OPT2**	The fourth 10/100/1000 Mbps Intel® I211 ethernet port. This port is labeled “OPT2” for convenience, but is not limited in its capacity. Bottom left LED emits solid Green

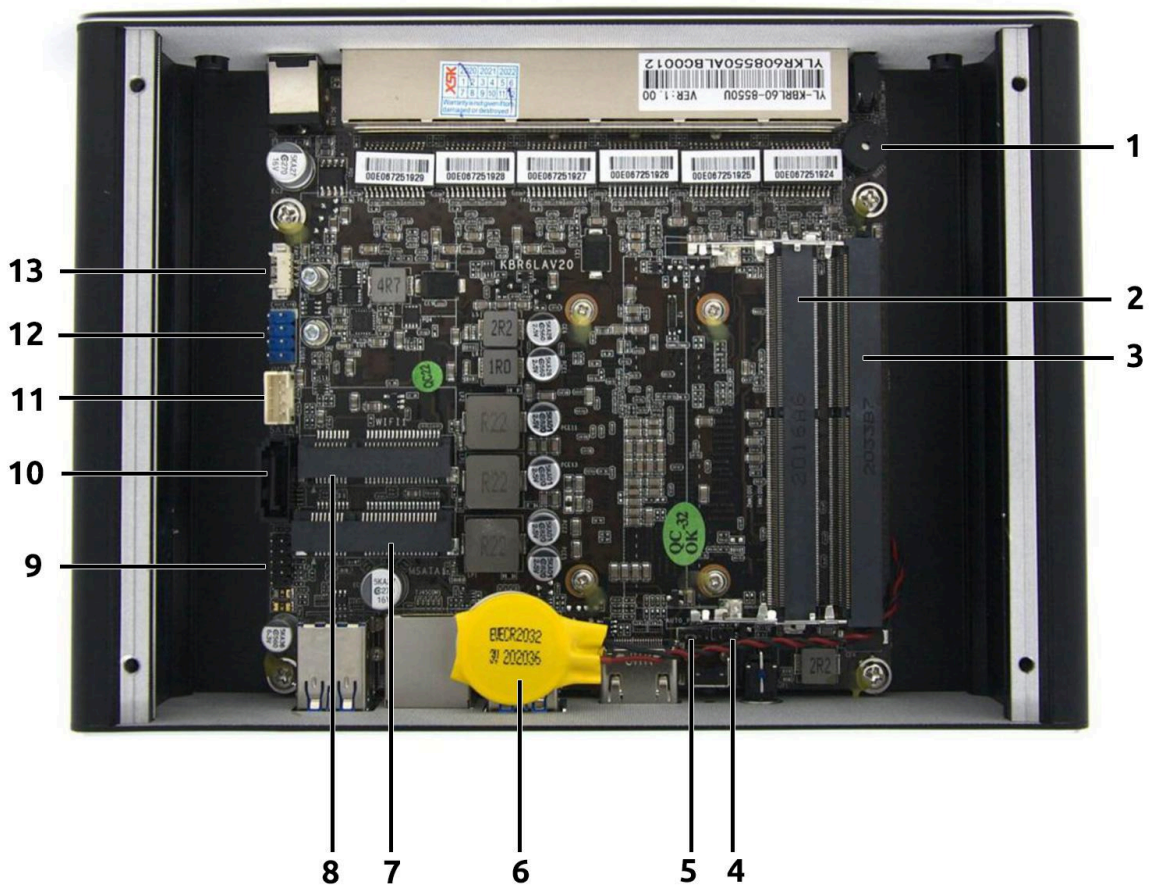
© 2025 Protectli. All Rights Reserved.

			at 1000/100Mbps, and is turned off at 10Mbps.
6	Ethernet Port 3	**OPT1**	The third 10/100/1000 Mbps Intel® I211 ethernet port. This port is labeled “OPT1” for convenience, but is not limited in its capacity. Bottom left LED emits solid Green at 1000/100Mbps, and is turned off at 10Mbps.
7	Ethernet Port 2	**LAN**	The second 10/100/1000 Mbps Intel® I211 ethernet port. This port is labeled “LAN” for convenience, but is not limited in its capacity. Bottom left LED emits solid Green at 1000/100Mbps, and is turned off at 10Mbps.
8	Ethernet Port 1	**WAN**	The first 10/100/1000 Mbps Intel® I211 ethernet port. This port is labeled “WAN” for convenience, but is not limited in its capacity. Bottom left LED emits solid Green at 1000/100Mbps, and is turned off at 10Mbps.
10	Power Indicator LED		This LED will stay solid green when the device is powered on.
11	HDD Activity LED		This red LED will light up when data activity is detected on either the mSATA or SATA interfaces.

© 2025 Protectli. All Rights Reserved.

Internal Interfaces

Motherboard Layout and Pin Configuration



Item #	Object	Label	Description
1	Buzzer	BUZZ1	PC speaker. Produces “beep” sounds that may be utilized by system firmware or certain operating systems.
2	Memory Slot	SODIMM1	DDR4 SODIMM.
3	Memory Slot	SODIMM2	DDR4 SODIMM.
4	NVRAM Reset Jumper	JCMOS	Shorting this jumper while the CMOS battery is connected will reset the BIOS NVRAM.

© 2025 Protectli. All Rights Reserved.

<table>
<tr><td>5</td><td>Power Restore Jumper</td><td>AUTO_P</td><td>Jumper setting determines system state after power loss. Closing the jumper will cause the unit to automatically power on when power is restored after an outage. Jumper is on pins 1 and 2 by default to allow the unit to automatically attempt to power back on after power loss.</td></tr>
<tr><td>6</td><td>CMOS Battery</td><td></td><td>3V CR2032 connected via 1.25mm pitch 2-pin connector on the opposite side of the motherboard.</td></tr>
<tr><td>7</td><td>mSATA Connector</td><td>MSATA1</td><td>Connector for an mSATA storage device, such as an SSD.</td></tr>
<tr><td>8</td><td>WiFi Expansion Slot</td><td>WIFI1</td><td>Connector uses PCIe Gen 3 x1. Designed for Protectli WiFI cards, but is not limited in its capabilities.</td></tr>
<tr><td>9</td><td>Front Panel Header</td><td>FP1</td><td>Internal header for adding external device controls and indicators featured through the front panel, such as power button, reset button, activity LEDs, etc. (2x5, pin 10 clipped, 2.0mm pitch)
<table>
<tr><td>Pin 1: +3.3V HDD LED+</td><td>Pin 2: +5V Power LED</td></tr>
<tr><td>Pin 3: SATA LED -</td><td>Pin 4: Ground</td></tr>
<tr><td>Pin 5: Ground</td><td>Pin 6: Panel Switch</td></tr>
<tr><td>Pin 7: Front Panel Reset</td><td>Pin 8: Ground</td></tr>
<tr><td>Pin 9: Ground</td><td>X</td></tr>
</table></td></tr>
<tr><td>10</td><td>SATA Data Connector</td><td>SATA1</td><td>SATA III data connector. Recommended for additional storage, such as a 2.5” SATA SSD. (Standard 7-PIN SATA III Plug)</td></tr>
<tr><td>11</td><td>SATA Power Connector</td><td>JSATA1</td><td>SATA power connector for additional storage. (1x4, 2.0mm pitch, JST PH style connector)</td></tr>
<tr><td>12</td><td>USB 2.0 Header</td><td>FUSB1</td><td>Internal header for additional USB 2.0 connections. (2x4, 2.54mm pitch)
<table>
<tr><td>Pin 1: +5V</td><td>Pin 2: +5V</td></tr>
<tr><td>Pin 3: USB Port 6 Negative Data Line</td><td>Pin 4: USB Port 5 Negative Data Line</td></tr>
<tr><td>Pin 5: USB Port 6 Positive Data Line</td><td>Pin 6: USB Port 5 Positive Data Line</td></tr>
</table></td></tr>
</table>

© 2025 Protectli. All Rights Reserved.

			Pin 7: Ground | Pin 8: Ground
13	Fan Header	CPU_FAN1	Four-pin PicoBlade-compatible header for optional PWM CPU fan. (1x4, 1.25mm pitch)

Dimensions View



© 2025 Protectli. All Rights Reserved.

Document History

2025-02-04

- Removed the incorrectly mentioned display port capabilities of USB 3 ports

2025-01-28

- Included Overview and Included Accessories and Components sections
- Added note regarding LED behavior for Ethernet Ports based on connection speed
- Changed USB3 Connector speed to USB 3.2 Gen 1 to accurately reflect the hardware
- Removed "LP" from SODIMM slot description
- Added pitch size to CMOS battery connector
- Changed description for WiFi1 slot to remove mention of LTE modems, added PCIe Gen
- Added pitch and pin layout for FP1
- Added connector type for SATA1
- Added pitch and connector type for JSATA1
- Added pitch and pin layout for FUSB1
- Added pitch to CPU_FAN1

2024-08-01

- Updated “RS232” to “RS-232”
- Updated “PC Speaker” to “PC speaker”
- Updated linked spec sheet with ® and ™ as necessary for Intel and AMI

2024-06-28

- Clarified PCI and USB specifications such as speed, protocol, etc.

2024-05-09

- Clarified LTE and/or WiFi slot naming schemes

2023-03-21

- Initial document.

© 2025 Protectli. All Rights Reserved.