

ZBook 15 - Hewlett-Packard Company ZBook 15

Festplatte

- 2TB SSD Sata Alternate
<https://www.alternate.de/SAMSUNG/870-EVO-2-TB-SSD/html/product/1706406>
- 2TB SSD Sata Preisvergleich
<https://geizhals.de/samsung-ssd-870-evo-2tb-mz-77e2t0b-a2458802.html?hloc=at&hloc=de&hloc=pl&hloc=uk>
- Einbau SSD https://youtu.be/BvQOpAIHIAw?si=Wm_BExZXv74Rsesf

Linux Hardware Bericht

- <https://linux-hardware.org/?probe=b3006d9f04>

Gerätename	wbs-HP-ZBook-15 >
Speicher	31,3 GiB
Prozessor	Intel® Core™ i7-4800MQ CPU @ 2.70GHz × 8
Grafik	Quadro K1100M/PCIe/SSE2
Festplattenkapazität	256,1 GB
Name des Betriebssystems	Ubuntu 20.04.6 LTS
Typ des Betriebssystems	64-bit
GNOME-Version	3.36.8
Fenstermanager	X11
Software-Aktualisierungen	>

Secure Boot

Fehlermeldung:

Note: nvidia_uvm: module verification failed: signature and/or required key missing - tainting kernel

- <https://wiki.ubuntu.com/UEFI/SecureBoot>

Nvidia Grafikkarte

- <https://forums.developer.nvidia.com/t/390-on-ubuntu-24-04/291496>
- <https://launchpad.net/~kelebek333/+archive/ubuntu/build>
- <https://forums.developer.nvidia.com/t/390-on-ubuntu-24-04/291496/2>
- <https://www.nvidia.de/Download/driverResults.aspx/196223/de>

```
### Deinstallieren und Konfigurationen entsorgen ###
sudo apt-get purge nvidia*
sudo rm /etc/X11/xorg.conf
### Treiber neu installieren ###
sudo apt-get install xserver-xorg-video-nvidia-390 nvidia-settings nvidia-
prime
```

Lüfter

Lüfter Dauerbetrieb lässt sich im Bios deaktivieren

- https://praxistipps.chip.de/laptop-luefter-laeuft-staendig-das-koennen-sie-tun_91666

Boot

```
# AKtuelles Boot Kommando
cat /proc/cmdline

# Grub Optionen
sudo gedit /etc/default/grub

# Grub Konfiguration
sudo gedit /boot/grub/grub.cfg
```

Kernelmodule

```
# Alle vorhandenen Sound Module auflisten
find /lib/modules/$(uname -r) | grep snd
```

Audio

Intel Corporation 8 Series/C220 Series Chipset High Definition Audio Controller sound snd_hda_intel

Soundkarte:

```
# Alsa Information
aplay -l

inxi -A
# Audio:      Device-1: Intel 8 Series/C220 Series High Definition Audio
driver: N/A
#            Device-2: NVIDIA GK107 HDMI Audio driver: N/A

sudo modprobe snd_hda_intel
# modprobe: FATAL: Module snd_hda_intel not found in directory
/lib/modules/5.13.0-25-generic

# Einstellungen für das Modul snd_hda_intel
grep snd-hda-intel /etc/modprobe.d/*
/etc/modprobe.d/oss4-base_noALSA.conf:blacklist snd-hda-intel
```

Export Alsa:

- <http://alsa-project.org/db/?f=ce25fc43f73d54b26136fa92c7be00328524b51e>

00:1b.0 Audio device: Intel Corporation 8 Series/C220 Series Chipset High Definition Audio Controller (rev 04)

```
Subsystem: Hewlett-Packard Company ZBook 15
Flags: fast devsel, IRQ 255
Memory at d0330000 (64-bit, non-prefetchable) [disabled] [size=16K]
Capabilities: [50] Power Management version 2
Capabilities: [60] MSI: Enable- Count=1/1 Maskable- 64bit+
Capabilities: [70] Express Root Complex Integrated Endpoint, MSI 00
Capabilities: [100] Virtual Channel
```

LSPCI

[lspci -v](#)

00:00.0 Host bridge: Intel Corporation Xeon E3-1200 v3/4th Gen Core Processor DRAM Controller (rev 06)

```
Subsystem: Hewlett-Packard Company ZBook 15
Flags: bus master, fast devsel, latency 0
```

Capabilities: [e0] Vendor Specific Information: Len=0c <?>

00:01.0 PCI bridge: Intel Corporation Xeon E3-1200 v3/4th Gen Core Processor PCI Express x16 Controller (rev 06) (prog-if 00 [Normal decode])

Flags: bus master, fast devsel, latency 0, IRQ 25
Bus: primary=00, secondary=01, subordinate=01, sec-latency=0
I/O behind bridge: 00005000-00005fff [size=4K]
Memory behind bridge: cf000000-d00fffff [size=17M]
Prefetchable memory behind bridge: 0000000070000000-0000000081ffffff [size=288M]
Capabilities: [88] Subsystem: Hewlett-Packard Company Xeon E3-1200 v3/4th Gen Core Processor PCI Express x16 Controller
Capabilities: [80] Power Management version 3
Capabilities: [90] MSI: Enable+ Count=1/1 Maskable- 64bit-
Capabilities: [a0] Express Root Port (Slot+), MSI 00
Capabilities: [100] Virtual Channel
Capabilities: [140] Root Complex Link
Capabilities: [d94] Secondary PCI Express
Kernel driver in use: pcieport

00:14.0 USB controller: Intel Corporation 8 Series/C220 Series Chipset Family USB xHCI (rev 04) (prog-if 30 [XHCI])

Subsystem: Hewlett-Packard Company ZBook 15
Flags: bus master, medium devsel, latency 0, IRQ 30
Memory at d0320000 (64-bit, non-prefetchable) [size=64K]
Capabilities: [70] Power Management version 2
Capabilities: [80] MSI: Enable+ Count=1/8 Maskable- 64bit+
Kernel driver in use: xhci_hcd
Kernel modules: xhci_pci

00:16.0 Communication controller: Intel Corporation 8 Series/C220 Series Chipset Family MEI Controller #1 (rev 04)

Subsystem: Hewlett-Packard Company ZBook 15
Flags: bus master, fast devsel, latency 0, IRQ 255
Memory at d0335000 (64-bit, non-prefetchable) [size=16]
Capabilities: [50] Power Management version 3
Capabilities: [8c] MSI: Enable- Count=1/1 Maskable- 64bit+

00:16.3 Serial controller: Intel Corporation 8 Series/C220 Series Chipset Family KT Controller (rev 04) (prog-if 02 [16550])

Subsystem: Hewlett-Packard Company 8 Series/C220 Series Chipset Family KT Controller
Flags: 66MHz, fast devsel, IRQ 19
I/O ports at 6070 [size=8]
Memory at d033c000 (32-bit, non-prefetchable) [size=4K]
Capabilities: [c8] Power Management version 3

Capabilities: [d0] MSI: Enable- Count=1/1 Maskable- 64bit+
Kernel driver in use: serial

00:19.0 Ethernet controller: Intel Corporation Ethernet Connection I217-LM (rev 04)

Subsystem: Hewlett-Packard Company ZBook 15
Flags: bus master, fast devsel, latency 0, IRQ 32
Memory at d0300000 (32-bit, non-prefetchable) [size=128K]
Memory at d033b000 (32-bit, non-prefetchable) [size=4K]
I/O ports at 6040 [disabled] [size=32]
Capabilities: [c8] Power Management version 2
Capabilities: [d0] MSI: Enable+ Count=1/1 Maskable- 64bit+
Capabilities: [e0] PCI Advanced Features
Kernel driver in use: e1000e
Kernel modules: e1000e

00:1a.0 USB controller: Intel Corporation 8 Series/C220 Series Chipset Family USB EHCI #2 (rev 04) (prog-if 20 [EHCI])

Subsystem: Hewlett-Packard Company ZBook 15
Flags: bus master, medium devsel, latency 0, IRQ 16
Memory at d033a000 (32-bit, non-prefetchable) [size=1K]
Capabilities: [50] Power Management version 2
Capabilities: [58] Debug port: BAR=1 offset=00a0
Capabilities: [98] PCI Advanced Features
Kernel driver in use: ehci-pci

00:1b.0 Audio device: Intel Corporation 8 Series/C220 Series Chipset High Definition Audio Controller (rev 04)

Subsystem: Hewlett-Packard Company ZBook 15
Flags: fast devsel, IRQ 255
Memory at d0330000 (64-bit, non-prefetchable) [disabled] [size=16K]
Capabilities: [50] Power Management version 2
Capabilities: [60] MSI: Enable- Count=1/1 Maskable- 64bit+
Capabilities: [70] Express Root Complex Integrated Endpoint, MSI 00
Capabilities: [100] Virtual Channel

00:1c.0 PCI bridge: Intel Corporation 8 Series/C220 Series Chipset Family PCI Express Root Port #1 (rev d4) (prog-if 00 [Normal decode])

Flags: bus master, fast devsel, latency 0, IRQ 26
Bus: primary=00, secondary=02, subordinate=3a, sec-latency=0
I/O behind bridge: 00002000-00002fff [size=4K]
Memory behind bridge: b8000000-ce0ffffff [size=353M]
Prefetchable memory behind bridge: 0000000090000000-00000000b1ffffff [size=544M]
Capabilities: [40] Express Root Port (Slot+), MSI 00
Capabilities: [80] MSI: Enable+ Count=1/1 Maskable- 64bit-
Capabilities: [90] Subsystem: Hewlett-Packard Company 8 Series/C220 Series

Chipset Family PCI Express Root Port
Capabilities: [a0] Power Management version 3
Kernel driver in use: pcieport

00:1c.4 PCI bridge: Intel Corporation 8 Series/C220 Series Chipset Family PCI Express Root Port #5
(rev d4) (prog-if 00 [Normal decode])

Flags: bus master, fast devsel, latency 0, IRQ 27
Bus: primary=00, secondary=3b, subordinate=5b, sec-latency=0
I/O behind bridge: 00003000-00004fff [size=8K]
Memory behind bridge: b4000000-b7ffffff [size=64M]
Prefetchable memory behind bridge: 0000000060100000-00000000602fffff [size=2M]
Capabilities: [40] Express Root Port (Slot+), MSI 00
Capabilities: [80] MSI: Enable+ Count=1/1 Maskable- 64bit-
Capabilities: [90] Subsystem: Hewlett-Packard Company 8 Series/C220 Series Chipset Family PCI Express Root Port
Capabilities: [a0] Power Management version 3
Kernel driver in use: pcieport

00:1c.6 PCI bridge: Intel Corporation 8 Series/C220 Series Chipset Family PCI Express Root Port #7
(rev d4) (prog-if 00 [Normal decode])

Flags: bus master, fast devsel, latency 0, IRQ 28
Bus: primary=00, secondary=5c, subordinate=5c, sec-latency=0
I/O behind bridge: [disabled]
Memory behind bridge: d0200000-d02fffff [size=1M]
Prefetchable memory behind bridge: [disabled]
Capabilities: [40] Express Root Port (Slot+), MSI 00
Capabilities: [80] MSI: Enable+ Count=1/1 Maskable- 64bit-
Capabilities: [90] Subsystem: Hewlett-Packard Company 8 Series/C220 Series Chipset Family PCI Express Root Port
Capabilities: [a0] Power Management version 3
Kernel driver in use: pcieport

00:1c.7 PCI bridge: Intel Corporation 8 Series/C220 Series Chipset Family PCI Express Root Port #8
(rev d4) (prog-if 00 [Normal decode])

Flags: bus master, fast devsel, latency 0, IRQ 29
Bus: primary=00, secondary=5d, subordinate=5d, sec-latency=0
I/O behind bridge: 00007000-00007fff [size=4K]
Memory behind bridge: d0100000-d01fffff [size=1M]
Prefetchable memory behind bridge: 0000000060300000-00000000604fffff [size=2M]
Capabilities: [40] Express Root Port (Slot+), MSI 00
Capabilities: [80] MSI: Enable+ Count=1/1 Maskable- 64bit-
Capabilities: [90] Subsystem: Hewlett-Packard Company 8 Series/C220 Series Chipset Family PCI Express Root Port
Capabilities: [a0] Power Management version 3
Kernel driver in use: pcieport

00:1d.0 USB controller: Intel Corporation 8 Series/C220 Series Chipset Family USB EHCI #1 (rev 04) (prog-if 20 [EHCI])

Subsystem: Hewlett-Packard Company ZBook 15
Flags: bus master, medium devsel, latency 0, IRQ 17
Memory at d0339000 (32-bit, non-prefetchable) [size=1K]
Capabilities: [50] Power Management version 2
Capabilities: [58] Debug port: BAR=1 offset=00a0
Capabilities: [98] PCI Advanced Features
Kernel driver in use: ehci-pci

00:1f.0 ISA bridge: Intel Corporation QM87 Express LPC Controller (rev 04)

Subsystem: Hewlett-Packard Company ZBook 15
Flags: bus master, medium devsel, latency 0
Capabilities: [e0] Vendor Specific Information: Len=0c <?>

00:1f.2 SATA controller: Intel Corporation 8 Series/C220 Series Chipset Family 6-port SATA Controller 1 [AHCI mode] (rev 04) (prog-if 01 [AHCI 1.0])

Subsystem: Hewlett-Packard Company ZBook 15
Flags: bus master, 66MHz, medium devsel, latency 0, IRQ 31
I/O ports at 6068 [size=8]
I/O ports at 607c [size=4]
I/O ports at 6060 [size=8]
I/O ports at 6078 [size=4]
I/O ports at 6020 [size=32]
Memory at d0338000 (32-bit, non-prefetchable) [size=2K]
Capabilities: [80] MSI: Enable+ Count=1/1 Maskable- 64bit-
Capabilities: [70] Power Management version 3
Capabilities: [a8] SATA HBA v1.0
Kernel driver in use: ahci
Kernel modules: ahci

00:1f.3 SMBus: Intel Corporation 8 Series/C220 Series Chipset Family SMBus Controller (rev 04)

Subsystem: Hewlett-Packard Company ZBook 15
Flags: medium devsel, IRQ 255
Memory at d0334000 (64-bit, non-prefetchable) [size=256]
I/O ports at ef80 [size=32]

01:00.0 VGA compatible controller: NVIDIA Corporation GK107GLM [Quadro K1100M] (rev a1) (prog-if 00 [VGA controller])

DeviceName: 0
Subsystem: Hewlett-Packard Company ZBook 15
Flags: bus master, fast devsel, latency 0, IRQ 33
Memory at cf000000 (32-bit, non-prefetchable) [size=16M]
Memory at 70000000 (64-bit, prefetchable) [size=256M]
Memory at 80000000 (64-bit, prefetchable) [size=32M]

I/O ports at 5000 [size=128]
Expansion ROM at 000c0000 [virtual] [disabled] [size=128K]
Capabilities: [60] Power Management version 3
Capabilities: [68] MSI: Enable+ Count=1/1 Maskable- 64bit+
Capabilities: [78] Express Endpoint, MSI 00
Capabilities: [b4] Vendor Specific Information: Len=14 <?>
Capabilities: [100] Virtual Channel
Capabilities: [128] Power Budgeting <?>
Capabilities: [600] Vendor Specific Information: ID=0001 Rev=1 Len=024 <?>
Capabilities: [900] Secondary PCI Express
Kernel driver in use: nvidia
Kernel modules: nvidiafb, nvidia_drm, nvidia

01:00.1 Audio device: NVIDIA Corporation GK107 HDMI Audio Controller (rev a1)

Subsystem: Hewlett-Packard Company ZBook 15
Flags: fast devsel, IRQ 255
Memory at d0000000 (32-bit, non-prefetchable) [disabled] [size=16K]
Capabilities: [60] Power Management version 3
Capabilities: [68] MSI: Enable- Count=1/1 Maskable- 64bit+
Capabilities: [78] Express Endpoint, MSI 00

5c:00.0 Network controller: Intel Corporation Wireless 7260 (rev 73)

DeviceName: WLAN
Subsystem: Intel Corporation Dual Band Wireless-N 7260
Flags: fast devsel, IRQ 255
Memory at d0200000 (64-bit, non-prefetchable) [disabled] [size=8K]
Capabilities: [c8] Power Management version 3
Capabilities: [d0] MSI: Enable- Count=1/1 Maskable- 64bit+
Capabilities: [40] Express Endpoint, MSI 00
Capabilities: [100] Advanced Error Reporting
Capabilities: [140] Device Serial Number ac-7b-a1-ff-ff-d2-d2-f0
Capabilities: [14c] Latency Tolerance Reporting
Capabilities: [154] Vendor Specific Information: ID=cafe Rev=1 Len=014 <?>

5d:00.0 Unassigned class [ff00]: Realtek Semiconductor Co., Ltd. RTS5249 PCI Express Card Reader (rev 01)

Subsystem: Hewlett-Packard Company ZBook 15
Flags: fast devsel, IRQ 255
Memory at d0100000 (32-bit, non-prefetchable) [disabled] [size=4K]
Capabilities: [40] Power Management version 3
Capabilities: [50] MSI: Enable- Count=1/1 Maskable- 64bit+
Capabilities: [70] Express Endpoint, MSI 00
Capabilities: [100] Advanced Error Reporting
Capabilities: [148] Device Serial Number 00-00-00-01-00-4c-e0-00
Capabilities: [158] Latency Tolerance Reporting
Capabilities: [160] L1 PM Substates

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