# x200 tablet

https://libreboot.org/docs/install/x200_external.html

```
root@x200:~# dmidecode | grep ROM\ Size
        ROM Size: 8192 kB

root@x200:~# ifconfig eth0
eth0: flags=4098<BROADCAST,MULTICAST>  mtu 1500
        ether 00:1f:16:0c:2a:41  txqueuelen 1000  (Ethernet)
```

https://operand.ca/2018/02/22/liberating-a-x200.html

# x230 tablet

https://www.coreboot.org/Board:lenovo/x230

https://www.ericholzbach.net/blog/x230_coreboot/

https://blog.noq2.net/corebooting-thinkpad-x230.html

http://zmatt.net/unlocking-my-lenovo-laptop-part-3/

XPE, VGA bios https://vimeo.com/177951809
https://mega.nz/#!PVxz2ZgS!u9ivPW3Hio3kGKcmBHsBLwlUpRe3n74NHQK-Gzgzt08

x230.dmi.after

x230.dmi.before

## EC

https://github.com/eigenmatt/mec-tools

# flashrom

```
pi@rpi3:~ $ sudo apt-get install build-essential pciutils usbutils libpci-dev libusb-dev libftdi1
```

# ME

http://hardenedlinux.org/firmware/2016/11/17/neutralize_ME_firmware_on_sandybridge_and_ivybridge.html

https://github.com/corna/me_cleaner

# before

```
dpavlin@x230:/x200/x230/coreboot/util/intelmetool$ sudo ./intelmetool -s
Bad news, you have a `QM77 Express Chipset LPC Controller` so you have ME hardware on board and y

MEI not hidden on PCI, checking if visible
MEI found: [8086:1e3a] 8;ï¿½

ME Status   : 0x1e000245
ME Status 2 : 0x60000106

ME: FW Partition Table      : OK
ME: Bringup Loader Failure  : NO
ME: Firmware Init Complete  : YES
ME: Manufacturing Mode      : NO
ME: Boot Options Present    : NO
ME: Update In Progress      : NO
ME: Current Working State   : Normal
ME: Current Operation State : M0 with UMA
ME: Current Operation Mode  : Normal
ME: Error Code              : No Error
ME: Progress Phase          : Host Communication
ME: Power Management Event  : Clean Moff->Mx wake
ME: Progress Phase State    : Host communication established

ME: Extend SHA-256: 72ac4092d50568edb998066d81033da5f626bf97fe7f9942d06247dbf59bf8db

ME: timeout waiting for data: expected 8, available 0
ME: GET FW VERSION message failed
ME Capability: Full Network manageability                 : OFF
ME Capability: Regular Network manageability              : OFF
ME Capability: Manageability                              : ON
ME Capability: Small business technology                  : ON
ME Capability: Level III manageability                    : OFF
ME Capability: IntelR Anti-Theft (AT)                     : ON
ME Capability: IntelR Capability Licensing Service (CLS)  : ON
ME Capability: IntelR Power Sharing Technology (MPC)      : ON
ME Capability: ICC Over Clocking                          : ON
ME Capability: Protected Audio Video Path (PAVP)          : ON
ME Capability: IPV6                                       : OFF
ME Capability: KVM Remote Control (KVM)                   : OFF
ME Capability: Outbreak Containment Heuristic (OCH)       : OFF
ME Capability: Virtual LAN (VLAN)                         : ON
ME Capability: TLS                                        : ON
ME Capability: Wireless LAN (WLAN)                        : OFF
```