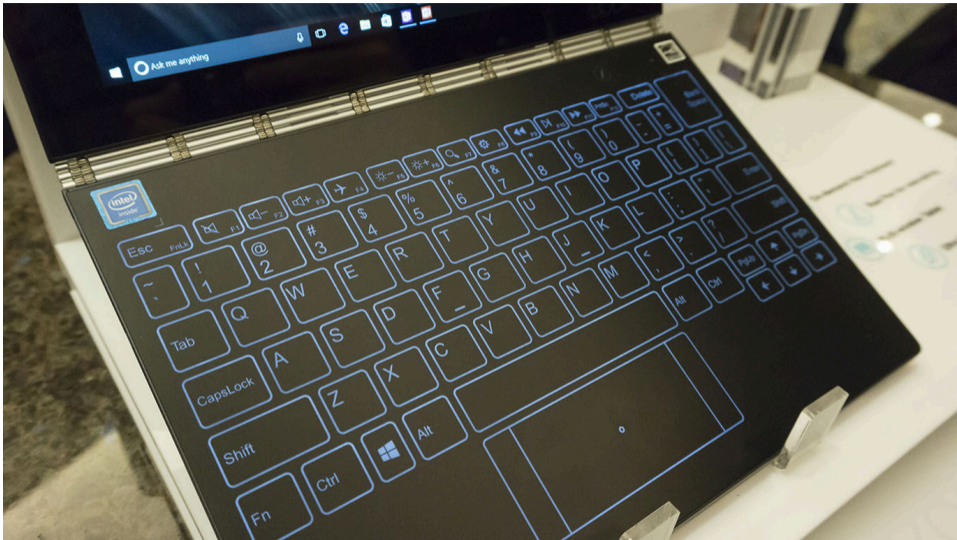


Kdy se přestaly vyrábět notebooky?

Emil Miler & Petr Hodač

Modifikace strojů ThinkPad T430 a X230





Drew Breunig

@dbreunig

 Follow

Apple's fastest growing product category.



[Return] [Catalog] [Bottom] [Update] [Auto]

File: [1505063916107.png](#) (253 KB, 600x600)



T420 - 14", normal size
X220 - 12.5", ultraportable

Recommended original IBM design models:
T60, T61, X60, X61, 860, Transnote, PC110

Why ThinkPad? (also applies to other business laptops)

- >Used machines are plentiful and cheap.
- >Excellent keyboards - tactile feel and quiet.
- >Great durability: chassis uses a magnesium rollcage for structural integrity, with high quality plastic body panels.

Anonymous 10/01/17(Sun)11:37:39 No.62698012 ▶ [>>62699221](#) [>>62704528](#) [>>62709020](#) [>>62714528](#)

Show your family of thinkpads edition

IRC: #/tpg/ on irc.rizon.net

Previous thread:

[>>62680574](#) →

Other business laptops are also welcome in /tpg/ (e.g. Dell Latitude/Precision, HP EliteBook/ZBook)

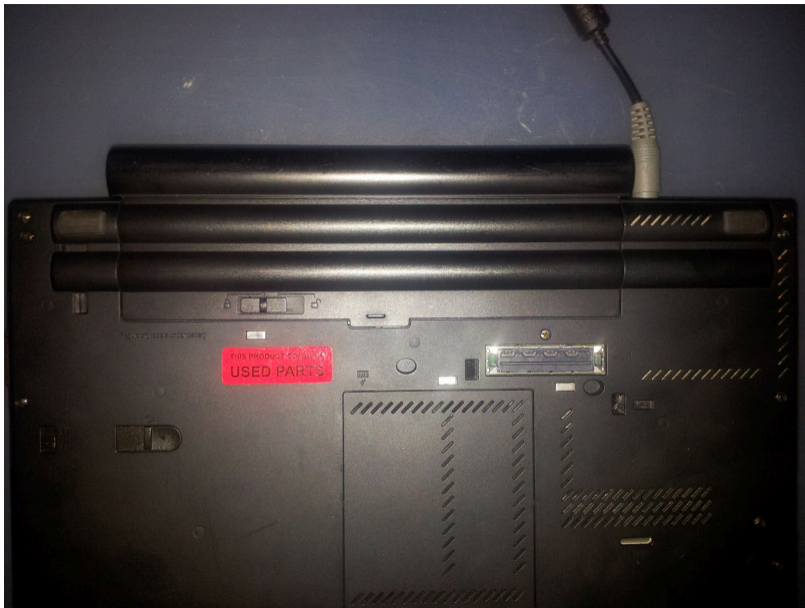
If you're looking for purchase advice, READ THE BUYERS GUIDE FIRST. Then post, stating
>Don't buy anything OTHER THAN HP Elitebook (2570p, 8770W, 2170p), Dell Latitude/Precision
the Real Business Experience™

Recommended models:















T420

- ▶ + Klasická klávesnice
- ▶ - Sandy Bridge (HD3000)
- ▶ - USB 2



T430

- ▶ + Ivy Bridge (HD4000)
- ▶ + USB 3
- ▶ - Nová klávesnice







Klávesnice



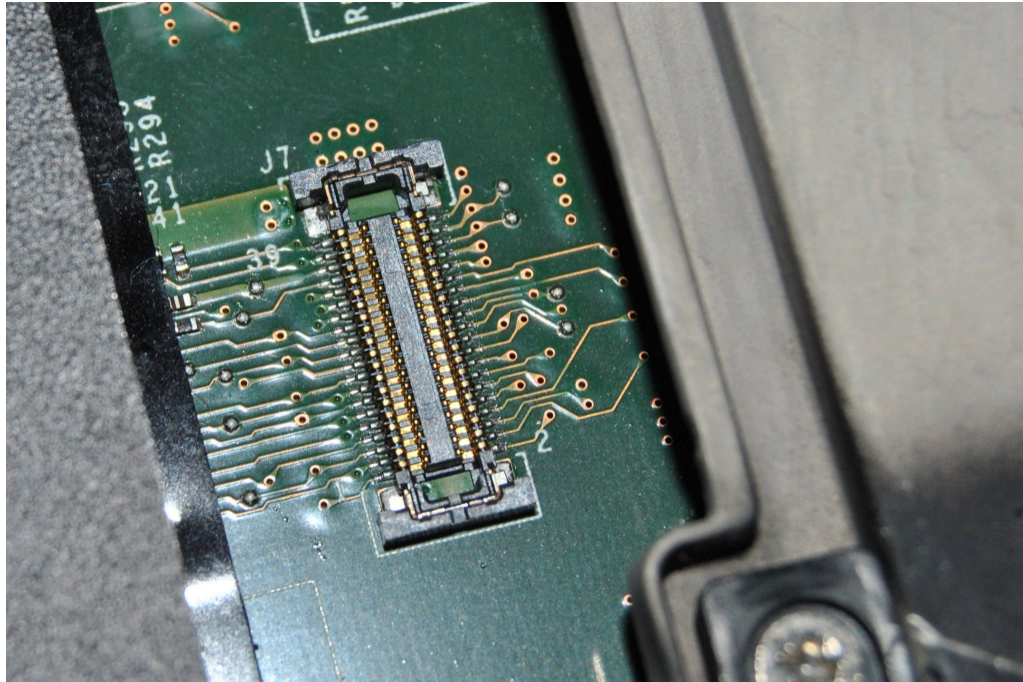
T410/T420

- ▶ 7 řad
- ▶ Klasické klávesy
- ▶ Lepší rozložení kláves
- ▶ Bez podsvícení
- ▶ Hlubší stisk










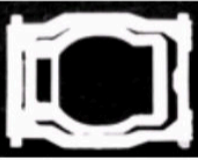


T430

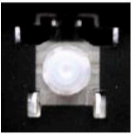
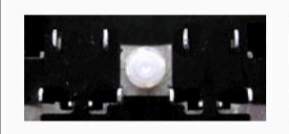
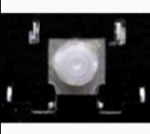
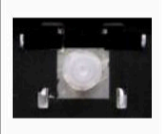


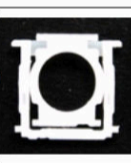




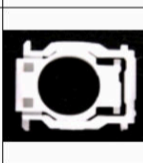
- ▶ 6 řad
- ▶ "Island style", "Chiclet"
- ▶ Divné rozložení kláves
- ▶ Možnost podsvícení
- ▶ Nižší hloubka stisku








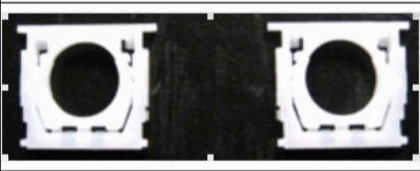




	Standard clip-1	Big clip-1	Big clip-2	Big clip-3	Small clip
Example keys	Letter Number Alt Ctrl Fn R_Shift	Tab Capslock \	Left_Shift Backspace Enter	Esc Del	1st row keys Arrow keys
Base					
Retainer Clip					

NMB
45N2211

	Standard clip-1	Standard clip-2	Big clip-1	Big clip-2	Big clip-3	Small clip
Example keys	Letter Number <u>Alt R Ctrl Fn</u>	Right Shift	Left Shift Enter Backspace	Tab Capslock L Ctrl \ 	Esc, Delete	1st row keys Arrow keys
Base						
Retainer Clip						

Chicony
45N2141

	Standard clip-1	Standard clip-2	Big clip	Small clip
Example keys	Letter Number Alt Ctrl Fn Del Esc	Right Shift	Left Shift Enter Backspace Tab Capslock \ 	1st row keys Arrow keys
Base				
Retainer Clip				

ALPS
45N2071



Laptop Keyboard For IBM(Lenovo Thinkpad)
T400S T410S T410SI T410 T410I T510 T510I
W510 Black US English 45N2176 45N2211

Price: **US \$44.12**/piece

Seller Guarantees: ships out within 7 business days

On-time Delivery 35 days

This is a snapshot of the product taken when the order was placed. [View current product](#)



o Thinkpad)
I T510 T510I
6 45N2211

placed. [View](#)

Hello,
Will this keyboard fit a ThinkPad T420 or T410? Is it really a FRU number 45N2211?

Me

17/04/29 06:16

fu ming

17/05/02 02:42

My dear friend,

Sorry for msileading you. The keyboard is fit for T410, also is fit for T420. Because the two model keyboar is the sa me. And the FRU number is also right. Very sorry for you. So if you buy it, we will give you 5\$ discount.

fu ming

17/05/01 08:19

My dear friend,

Thank you for your kindly inquiry!The product you mentioned can not used for T410.The T410 is in our stock and if you need it, please do not hesitate to inform us!

Mary Lan

PARTS NO. 45N2106

D NO.: 73B1D1

FRU NO. 45N2141

MODEL NO. C9-89US

LH



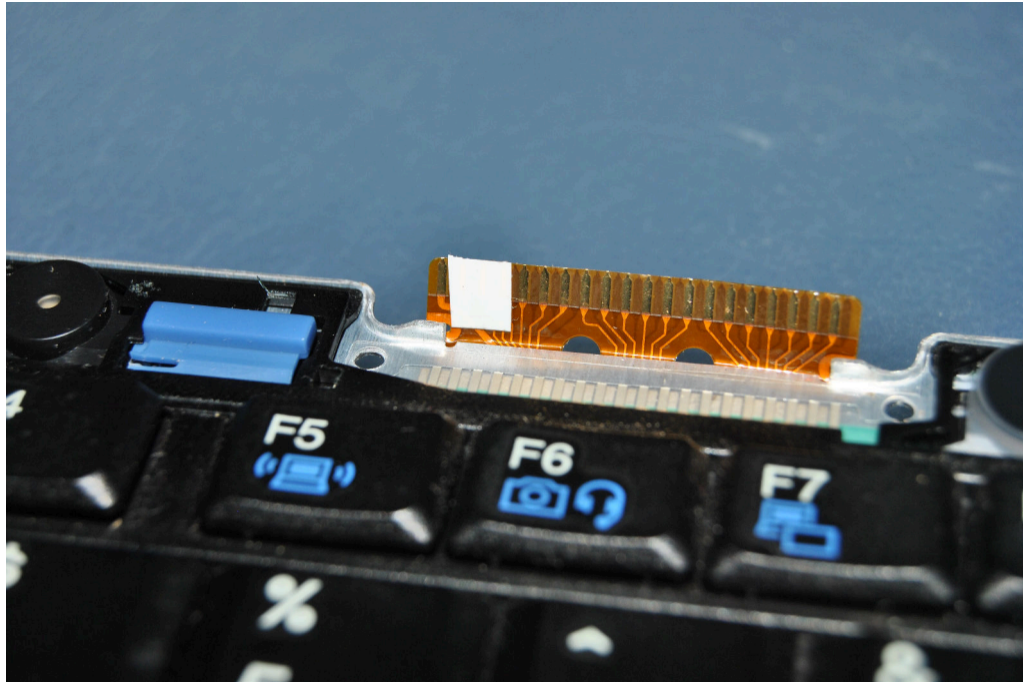
11S45N2106Z1ZFNV73B1D1

Made in China





source: thinkwiki.org





source: thinkwiki.org









lenovo

T430



ThinkPad

Infrastructure for patching x230 and similar Thinkpad embedded controller firmware

291 commits

2 branches

1 release

6 contributors








GPL-2.0

Branch: master

New pull request

Find file

Clone or download

 hamishcoleman	Ensure mtools has a known output format (fixes #43)	Latest commit 9450b50 16 days ago
 asm	Fix right-win and right-menu key definitions	8 months ago
 docs	Add extraction of the l430 EC firmware, update documentation with fin...	a month ago
 mec-tools @ 07a1b14	Update mec-tools to get a couple of fixes	a year ago
 radare	Fix x220 ec firmware image file in radare project file	3 months ago
 scripts	Remember to cite skochinsky as the original contributor of the PFH he...	a month ago
 t430.G1HT34WW.img.d	Disable battery_validate.patch for all supported models to match docs	4 months ago



 Download 1280x720 mp4 

43,434 views

 379  19

My personal fight against the modern laptop

Published by [linux.conf.au 2017 - Hobart, Tasmania](#) on Sun, 22 Jan 2017 22:46:00 GMT

```
~ » git clone https://github.com/hamishcoleman/thinkpad-ec
Cloning into 'thinkpad-ec'...
remote: Counting objects: 1211, done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 1211 (delta 0), reused 1 (delta 0), pack-reused 1208
Receiving objects: 100% (1211/1211), 588.17 KiB | 883.00 KiB/s, done.
Resolving deltas: 100% (736/736), done.
~ » cd thinkpad-ec/
thinkpad-ec » make list_laptops
./scripts/generate_deps Descriptions.txt >.d/generated.deps
```

The following make targets are the supported usb images:

```
patched.t430.img\t- for patching Thinkpad T430
patched.t430s.img\t- for patching Thinkpad T430s
patched.t530.img\t- for patching Thinkpad T530
patched.t530i.img\t- for patching Thinkpad T530i
patched.w530.img\t- for patching Thinkpad W530
patched.x230.img\t- for patching Thinkpad X230
patched.x230t.img\t- for patching Thinkpad X230t
```

```
thinkpad-ec » make patched.t430.img
Downloading t430 BIOS 2.72 (G1ETB2WW) EC 1.13 (G1HT35WW)
wget -O gluj40us.iso.orig https://download.lenovo.com/pccbbs/mobiles/gluj40us.iso
--2017-10-05 23:19:20-- https://download.lenovo.com/pccbbs/mobiles/gluj40us.iso
Loaded CA certificate '/etc/ssl/certs/ca-certificates.crt'
Resolving download.lenovo.com... 23.53.164.87
Connecting to download.lenovo.com|23.53.164.87|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 39170048 (37M) [application/octet-stream]
Saving to: 'gluj40us.iso.orig'
```

```
thinkpad-ec » sudo dd if=patched.t430.img of=/dev/sdb bs=4M status=progress
```

T430



Pause
Break

Insert

Delete

Home
⌂

PgUp
⬆️

F11

F12
⌘

End
⌘

PgDn
⬇️

Backspace
⬅️

Processor

Standard Features

- One of the following processors:
 - 2nd Generation Intel® Core™ i3-2328M (2.20 GHz, 3MB L3, 1333MHz FSB)
 - 2nd Generation Intel® Core™ i3-2370M (2.40 GHz, 3MB L3, 1333MHz FSB)
 - 2nd Generation Intel® Core™ i5-2520M (2.50 GHz, 3MB L3, 1333MHz FSB)
 - 3rd Generation Intel® Core™ i5-3210M (3.10 GHz, 3MB L3)
 - 3rd Generation Intel® Core™ i5-3230M (3.20 GHz, 3MB L3)
 - 3rd Generation Intel® Core™ i5-3320M (3.30 GHz, 3MB L3)
 - 3rd Generation Intel® Core™ i5-3360M (3.50 GHz, 3MB L3)
 - 3rd Generation Intel® Core™ i7-3520M (3.50 GHz, 4MB L3, 1333MHz FSB)
- One of the following graphics adapters:
 - Intel® HD Graphics 4000
 - NVIDIA® NVS 5400M Graphics with Optimus™ Technology
- One of the following TFT displays:
 - 14.0" HD (1366 x 768) (200 NITS)
 - 14.0" HD+ (1600 x 900) (250 NITS)

Standard Features

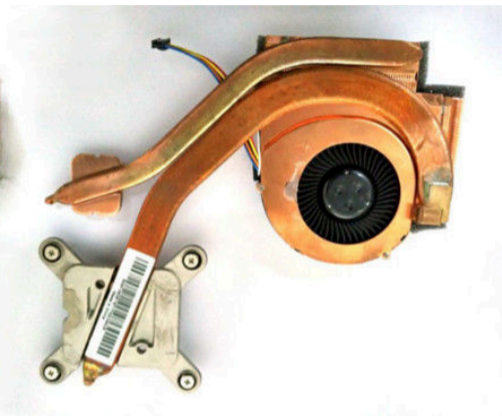
- One of the following processors:
 - 2nd Generation Intel® Core™ i3-2328M (2.20 GHz, 3MB L3, 1333MHz FSB)
 - 2nd Generation Intel® Core™ i3-2370M (2.40 GHz, 3MB L3, 1333MHz FSB)
 - 2nd Generation Intel® Core™ i5-2520M (2.50 GHz, 3MB L3, 1333MHz FSB)
 - 3rd Generation Intel® Core™ i5-3210M (3.10 GHz, 3MB L3)
 - 3rd Generation Intel® Core™ i5-3230M (3.20 GHz, 3MB L3)
 - 3rd Generation Intel® Core™ i5-3320M (3.30 GHz, 3MB L3)
 - 3rd Generation Intel® Core™ i5-3360M (3.50 GHz, 3MB L3)
 - 3rd Generation Intel® Core™ i7-3520M (3.50 GHz, 4MB L3, 1333MHz FSB)
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 - Intel® HD Graphics 4000
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- One of the following TFT displays:
 - 14.0" HD (1366 x 768) (200 NITS)
 - 14.0" HD+ (1600 x 900) (250 NITS)

Processor Branding & Model		Programmable TDP				CPU Turbo	Graphics Clock rate		L3 Cache	Release Date	Price (USD)
		SDP ^[65]	cTDP down	Nominal TDP	cTDP up		1-core	Normal			
Core i7	3940XM	N/A	45 W / ? GHz	55 W / 3.0 GHz	65 W / ? GHz	3.9 GHz	650 MHz	1350 MHz	8 MB	30 September 2012	\$1096
	3920XM		45 W / ? GHz	55 W / 2.9 GHz	65 W / ? GHz					23 April 2012	
	3840QM		45 W / 2.8 GHz	3.8 GHz	1300 MHz	8 MB		30 September 2012	\$568		
	3820QM							23 April 2012			
	3740QM		45 W / 2.7 GHz	3.7 GHz	1300 MHz	6 MB		30 September 2012	\$378		
	3720QM		45 W / 2.6 GHz					23 April 2012			
	3635QM		45 W / 2.4 GHz	3.4 GHz	1200 MHz	6 MB			N/A		
	3632QM		35 W / 2.2 GHz					30 September 2012			
	3630QM		45 W / 2.4 GHz	3.4 GHz	1150 MHz	6 MB			\$378		
	3615QM		45 W / 2.3 GHz					23 April 2012			
	3612QM		35 W / 2.1 GHz	3.1 GHz	1200 MHz	6 MB			\$378		
	3610QM		45 W / 2.3 GHz					23 April 2012			

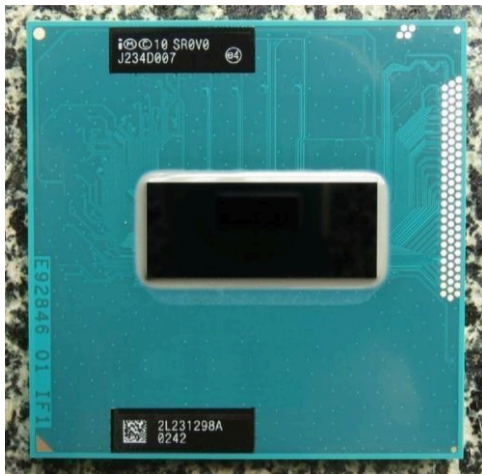
3632QM 			35 W / 2.2 GHz		3.2 GHz
3612QM 			35 W / 2.1 GHz		3.1 GHz



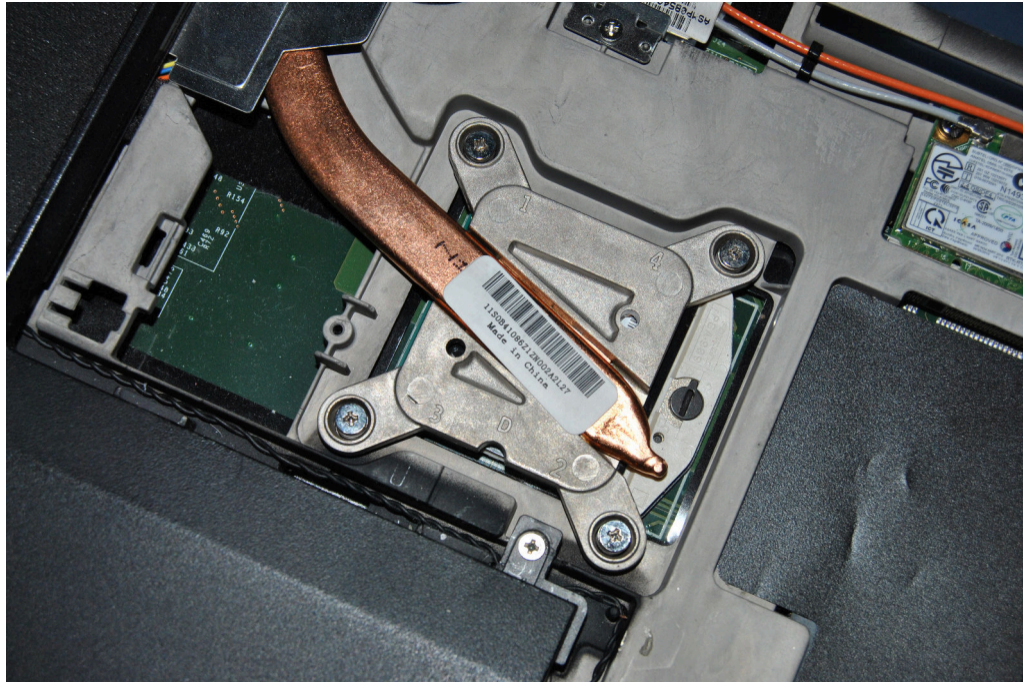
Intel

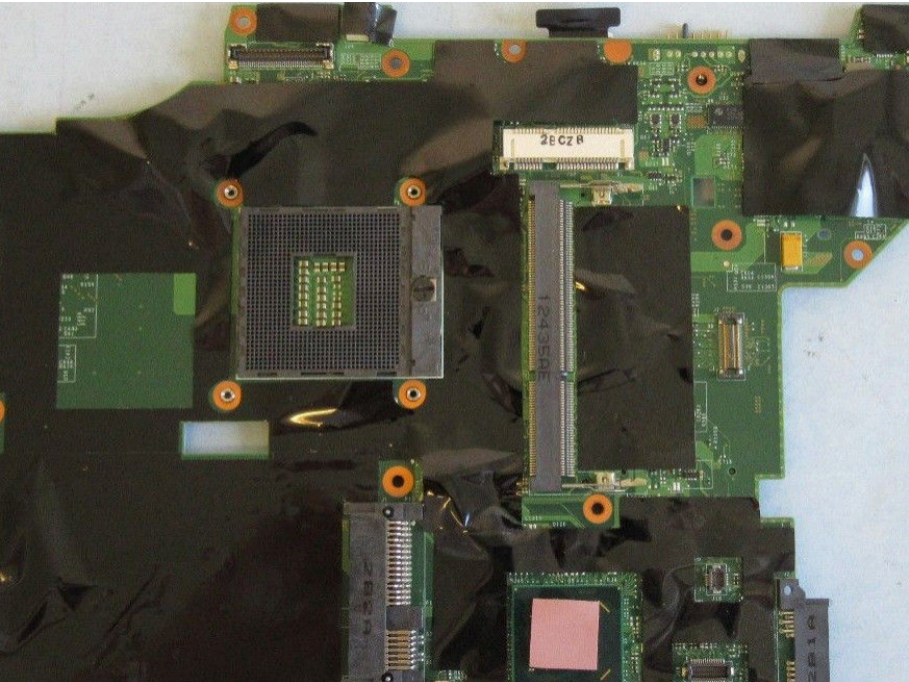


Nvidia



i7-3632QM





LCD Panel









Dell Alienware M14x R2



LG LP140WD2-TLD2
Thinkpad T420/T430



LG LP140WD2-TLG1
Alienware M14x R2

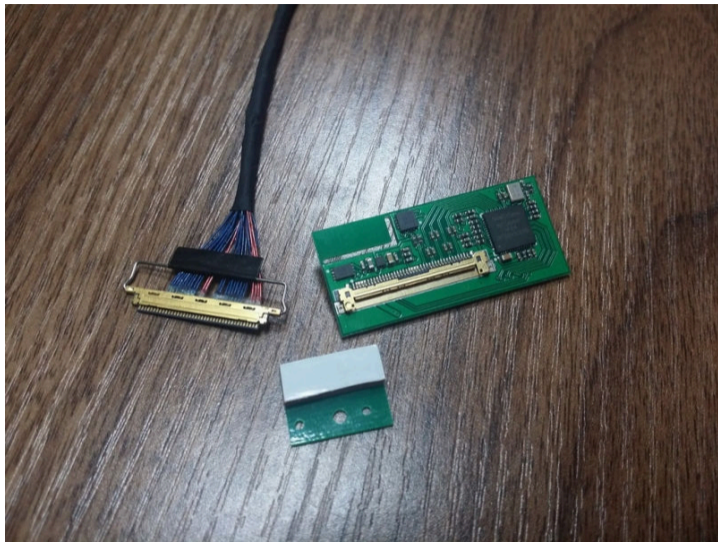


ThinkPad T440s

FHD IPS (eDP)



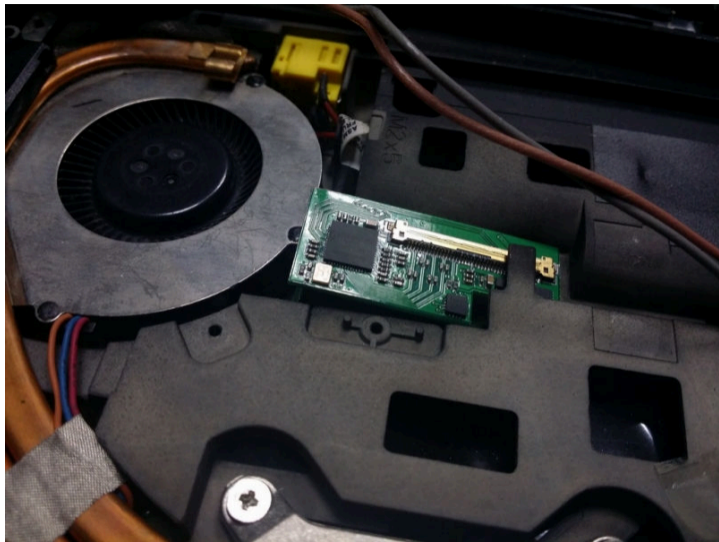
Thinkpad T440p



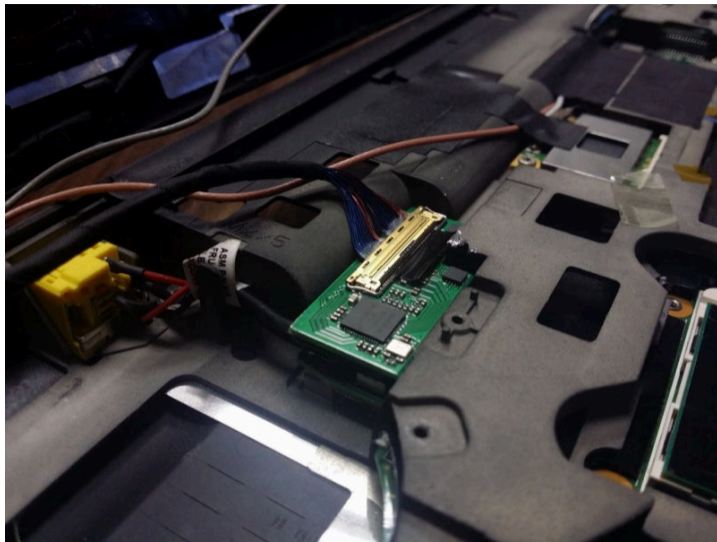
source: 51nb.com



source: 51nb.com



source: 51nb.com



source: 51nb.com



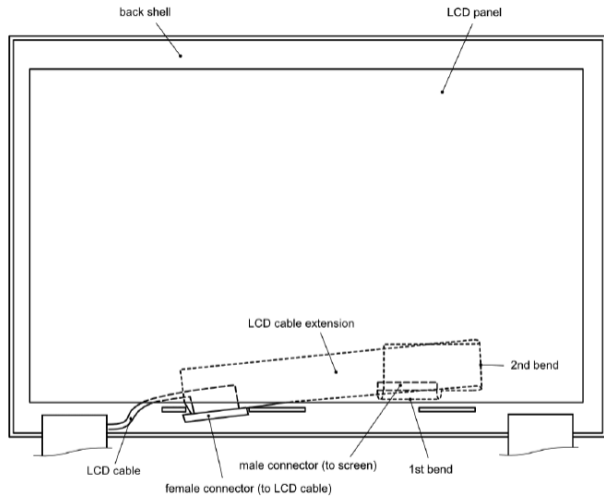
source: 51nb.com



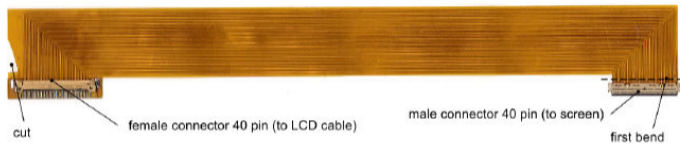
source: 51nb.com



ThinkPad X1 Carbon
TN (LVDS)

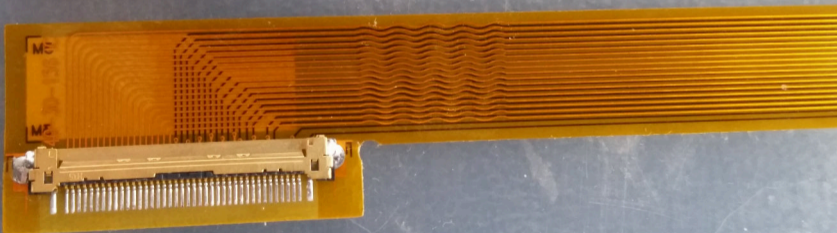
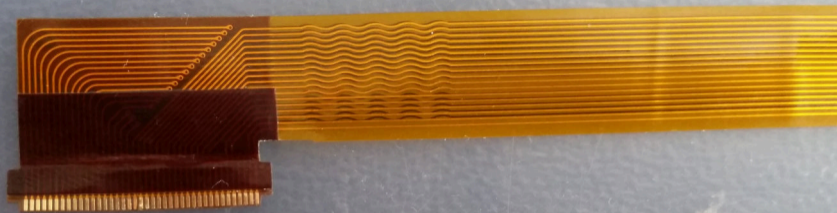


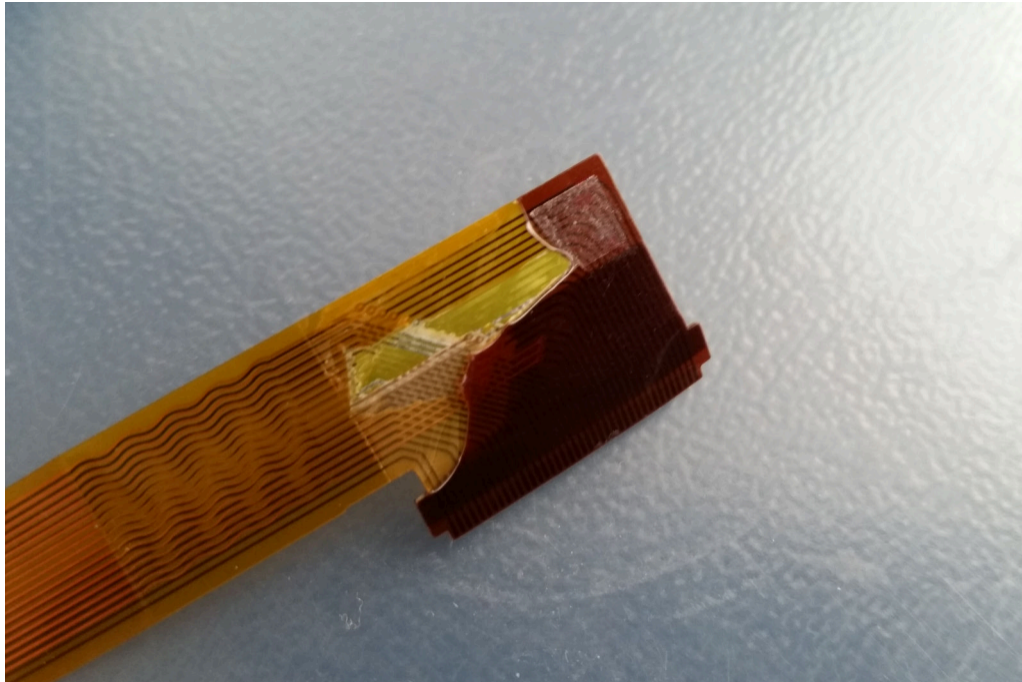
source: thinkwiki.org

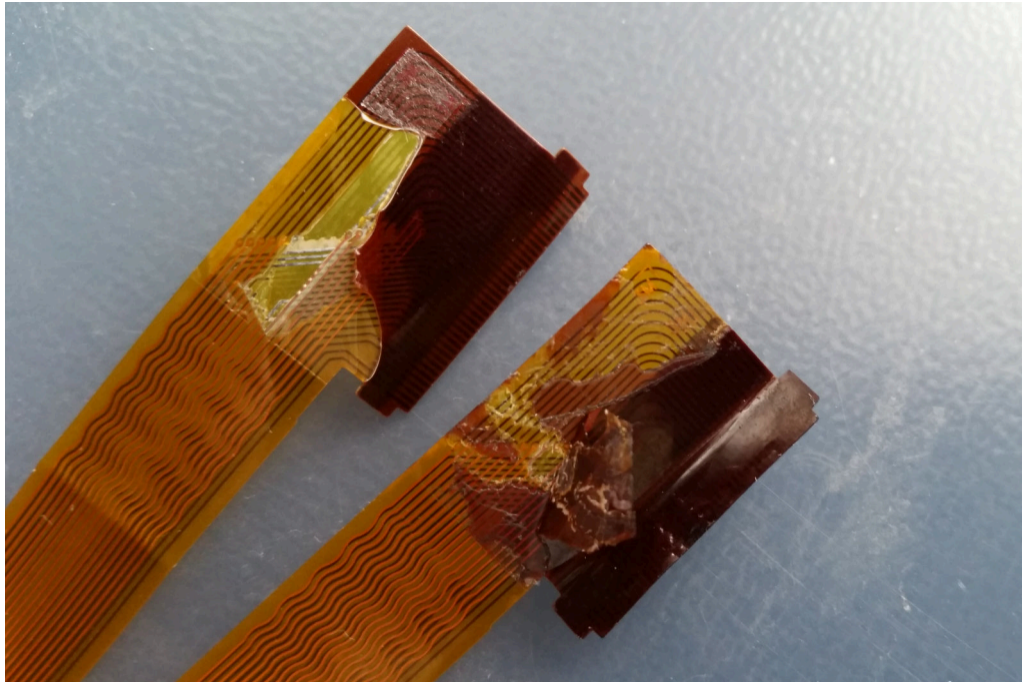


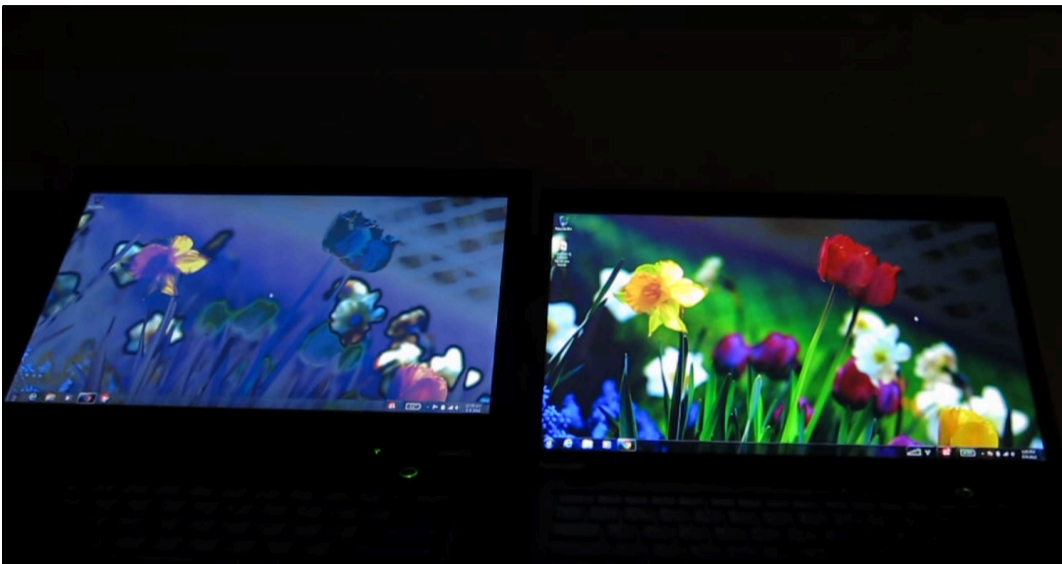
source: thinkwiki.org

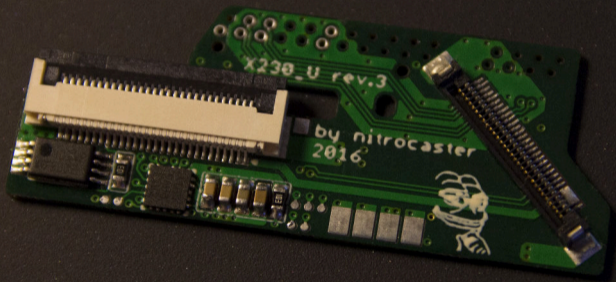


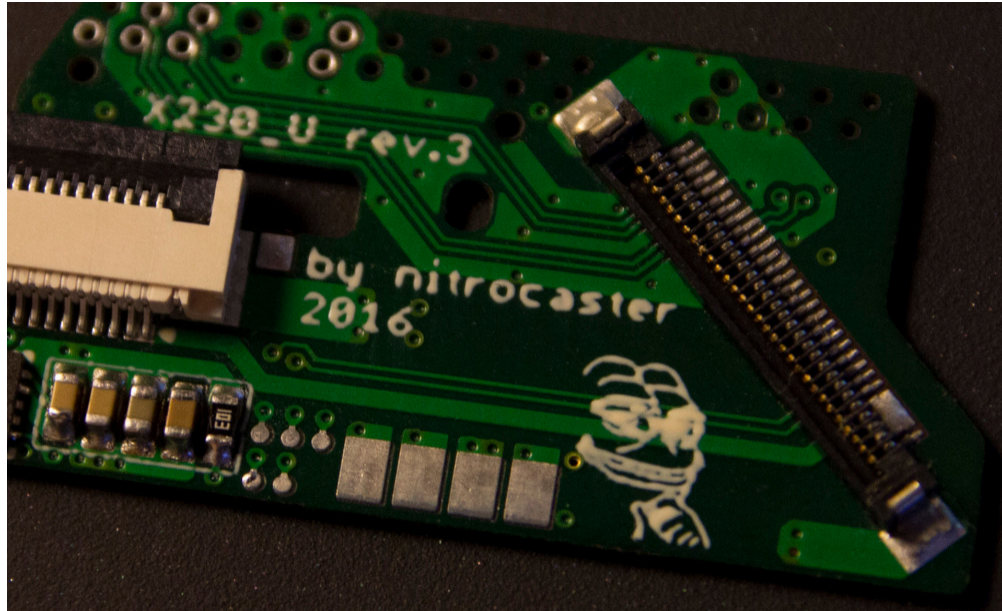












X230_U rev.3

by nitrocaster
2016





coreboot

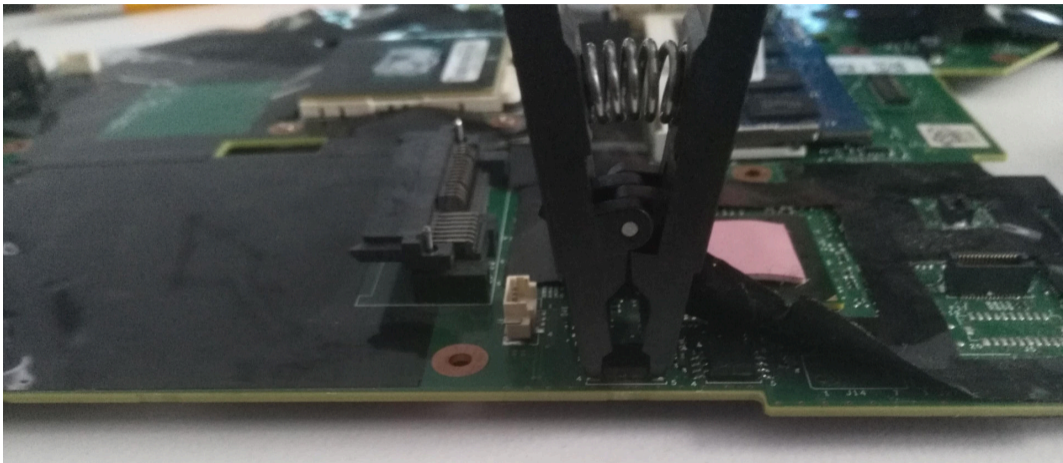
<http://nm-projects.de>



POMONA SOIC-CLIP



source: nm-projects.de



source: nm-projects.de



source: nm-projects.de

```
*** Important: Run 'make distclean' before switching boards ***
```

```
Mainboard vendor (Lenovo) --->
```

```
Mainboard model (ThinkPad T430) --->
```

```
ROM chip size (12288 KB (12 MB)) --->
```

```
(0x100000) Size of CBFS filesystem in ROM
```

```
() fmap description file in fmd format
```

```
( ) Local version string
(fallback) CBFS prefix to use
    Compiler to use (GCC) --->
[ ] Allow building with any toolchain
[ ] Use ccache to speed up (re)compilation
[ ] Generate flashmap descriptor parser using flex and bison
[ ] Generate SCONFIG & BLOOTOOL parser using flex and bison
[ ] Use CMOS for configuration values
[*] Compress ramstage with LZMA
[*] Include the coreboot .config file into the ROM image
[ ] Create a table of timestamps collected during boot
[*] Allow use of binary-only repository
[ ] Code coverage support
[ ] Undefined behavior sanitizer support
-*- Build the ramstage to be relocatable in 32-bit address space.
[ ] Update existing coreboot.rom image
[ ] Add a bootsplash image
```




```
SeaBIOS (version rel-1.10.0-53-gdd9bba5)
Machine UUID f8236181-52ce-11cb-bd50-a90dbe3622d9

Press ESC for boot menu.

Booting from DVD/CD...
Boot failed: Could not read from CDROM (code 0003)
Booting from Hard Disk...
```

source: nm-projects.de

eGPU





???