



HP Compaq nx7010 Business Notebook

Teardown

A look inside an old Hewlett-Packard Business notebook made in 2004.

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 **TOOLS:**

- **Phillips #0 Screwdriver (1)**
- **Flathead 3/32" or 2.5 mm Screwdriver (1)**

Step 1 — HP Compaq nx7010 Business Notebook Teardown



- A 9 year old Hewlett Packard nx7010 Business Notebook from 2004.
- More specifically, its model number is Cnx7010RP745Y580Wcg25P
- Back in 2004 it was a mid-range notebook priced at around A\$2,000.
- 1.8GHz Intel Celeron single core CPU.
- Windows XP Professional.
- 1680x1050 Anti-glare Screen (Which had a HORRIFIC ghosting effect).

Step 2



- A tour around the Notebook.
 - On the left hand side you will find a PCMCIA Card slot and the Optical drive.
 - On the right hand side you will find an Infra-Red window, Power jack, Kensington Lock and a fan vent.
 - On the back you will find VGA out, S-Video, 3x USB 2.0 ports, Phone line and Ethernet, Parallel port and FireWire (4 pin).

Step 3



- Here is the base of the notebook.
- Product Number PQ803PA#ABG
- Doors to access the battery, hard drive, RAM, CMOS battery, docking port and Mini PCI LAN network card.

i Serial number is [CND4500VRZ]. Decoding it reveals the notebook was made in China in December 2004.

Step 4



⚠️ **ALWAYS** remove the main power supply when working on an electrical device (both battery and mains).

- Battery part number is [337607-001]
- 14.8 volts.
- 4.4 Amps per hour (4400 mAh).
- 8-cell.
- The battery was advertised to last for 5 hours unplugged when it was new back in 2004.
- After 9 years of cell deterioration, battery life is no more than 10 minutes.

Step 5



- Hard Disk Drive
- Fujitsu MHT2080AH PL
- 80.0GB capacity
- 5,400 revolutions per minute
- IDE Interface
- Made in Thailand

(i) The notebook was available with several hard drive options. 40GB and 60GB both with 4,200rpm or 5,400rpm speeds. Also available was an 80GB 5,200rpm HDD (as seen here)

- S.M.A.R.T data reveals that this drive has been powered on for a total of 2 years

Step 6



- Mini PCI LAN Network card
- Intel
- Model Number [WM3B2200BG]
- Wi-Fi Antennae plugs into this card

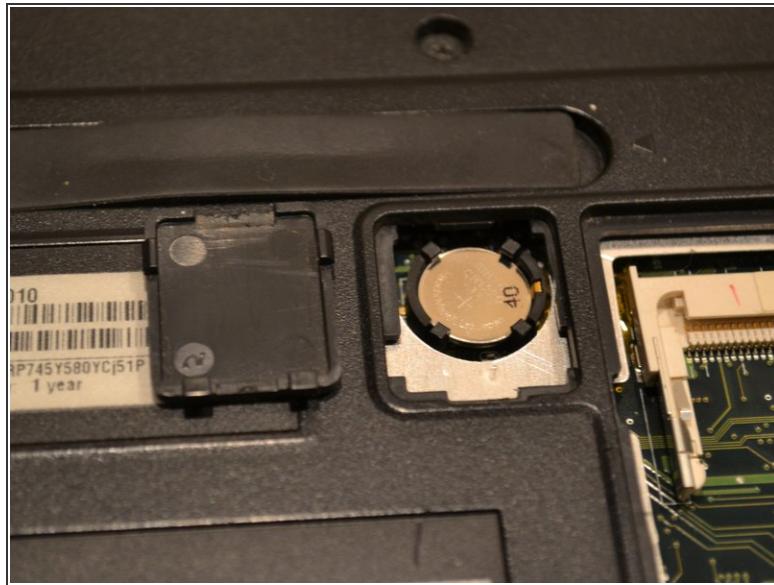
Step 7



- Hynix RAM from slot 1 under the base
- 512Mb SODIMM
- 333MHz
- Model Number [512D16S1-6H-P]

ⓘ There are two slots in the nx7010 with slot 2 being under the keyboard. The computer maxes out at only 2Gb (1Gb per slot)

Step 8



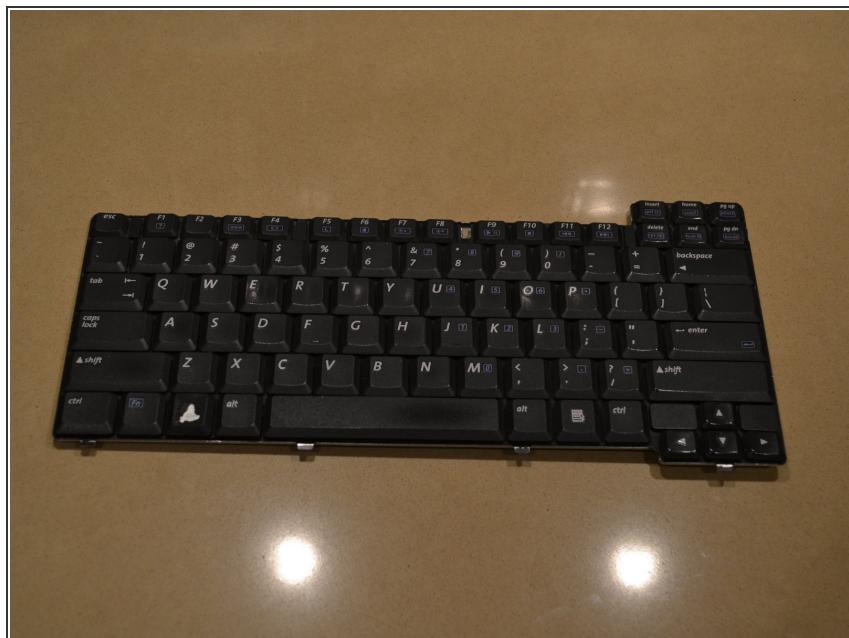
- CMOS battery
- Maxell CR1220
- 3 Volts
- Not very interesting

Step 9



- Removing the keyboard
 - Remove the two #0 Phillips screws from the base of the laptop
 - Turn the laptop over and open the lid
 - Undo the four clips at the top of the keyboard and flip out
 - Carefully undo the clip on the ribbon cable with a flat-head screw driver or spludger

Step 10



- The keyboard
- Part number [K001602E1 US]
- *(i)* Note that the dodgy Tux symbol painted on the Meta key is a customised key and is not original.

Step 11



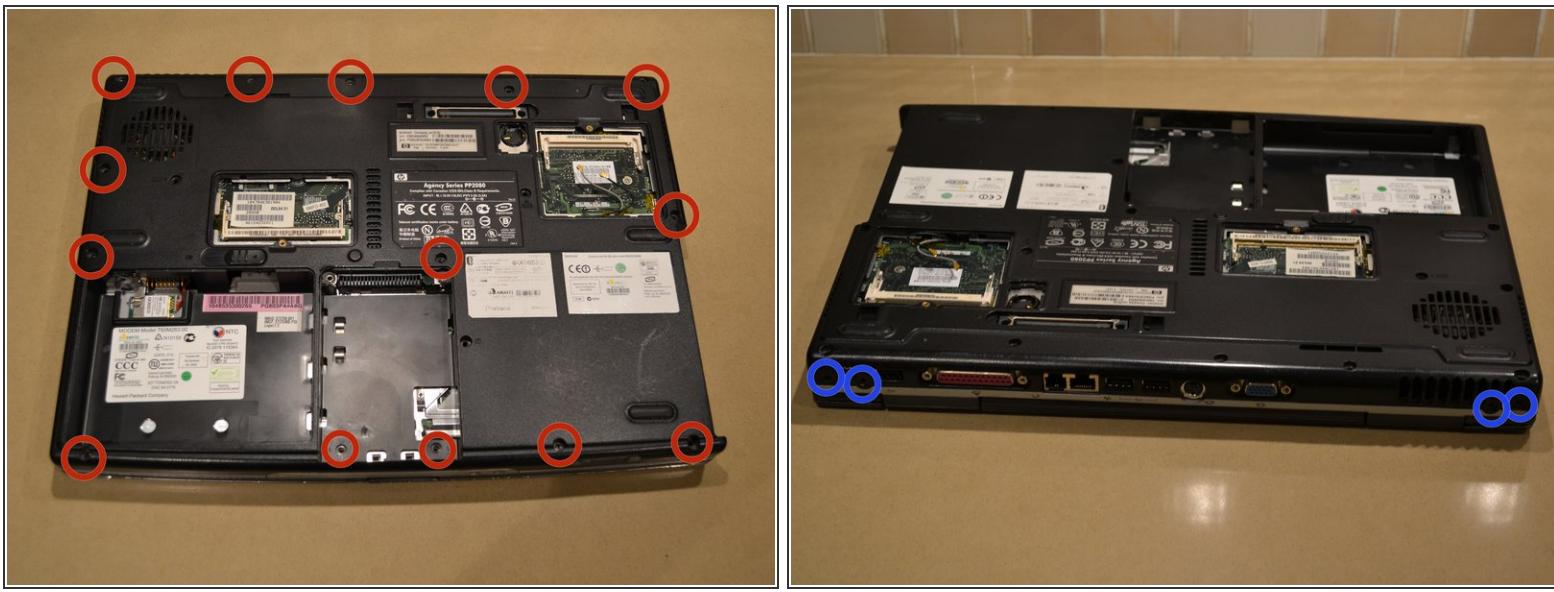
- Optical drive
 - Remove the single #0 Phillips screw
 - Slide out the optical drive
- Model Number GWA-4080N
- Manufactured with HP branding
- Made in Korea in November 2004
- DVD and CD compatible

Step 12



- RAM slot 2 located under the keyboard
- It's another 512Mb DDR SODIMM made by Samsung
- Product number [PC2700S-25331-A0]

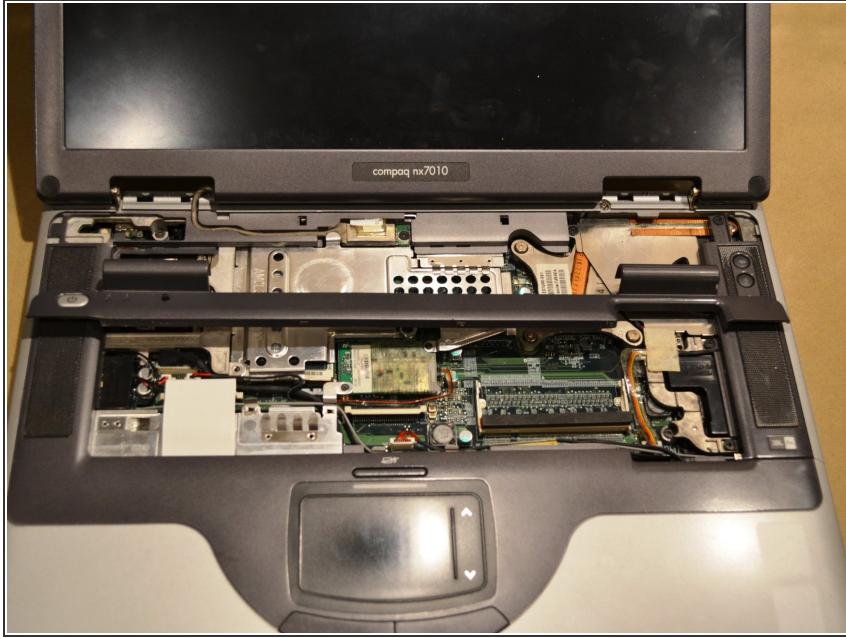
Step 13



- Remove all 18 screws from the base and the rear.
 - 14 screws from the base
 - 4 screws from the rear

(i) Keep track of all the screws because they vary in length

Step 14



- Removing the top panel between the keyboard and the screen reveals more screws to remove

Step 15



- 4 screws remove the left speaker and fan shield
- The three buttons in the speaker grille control the speakers
- From top to bottom it goes Volume up, Volume down and Mute.

Step 16



- Remove a single screw and pry the connector for the screen from the motherboard.
- After the connector is removed, the 1680x1050 15 inch (38cm) screen is free.

Step 17



- The display enclosure
- It is actually quite easy to do a DIY screen replacement as there is no glass or adhesive to deal with but there are tabs that snap everything together
- Removing the 6 screws allows you carefully remove the bezel by carefully undoing the tabs with a flathead screwdriver.

(i) I recommend using something made from soft plastic to undo the tabs as the plastic bezel and metal back panel damage easily.

- The hinges simply screw on and off

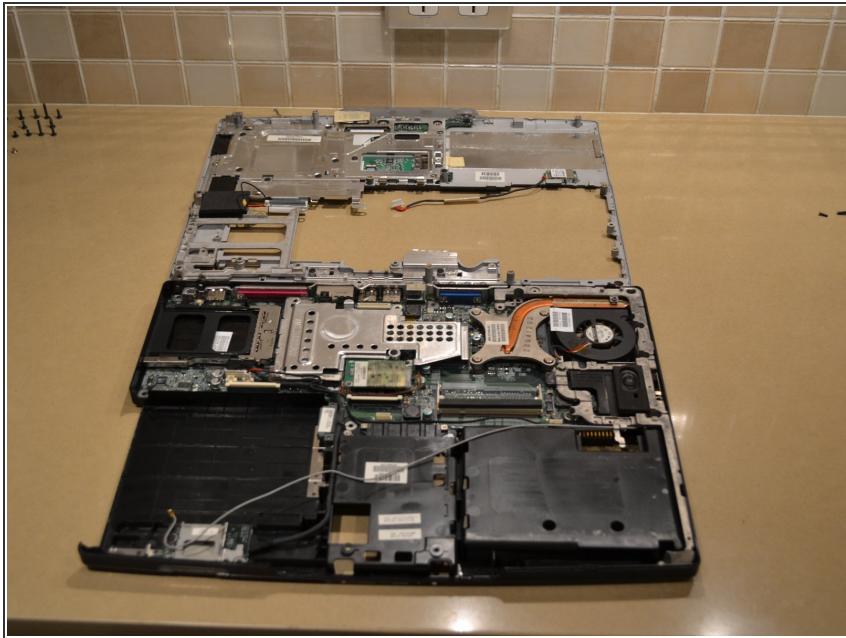
Step 18



- The 1680x1050 Cold Cathode Fluorescent back-lit (CCFL) display
- Hitachi model number TX39D99VC1FAA

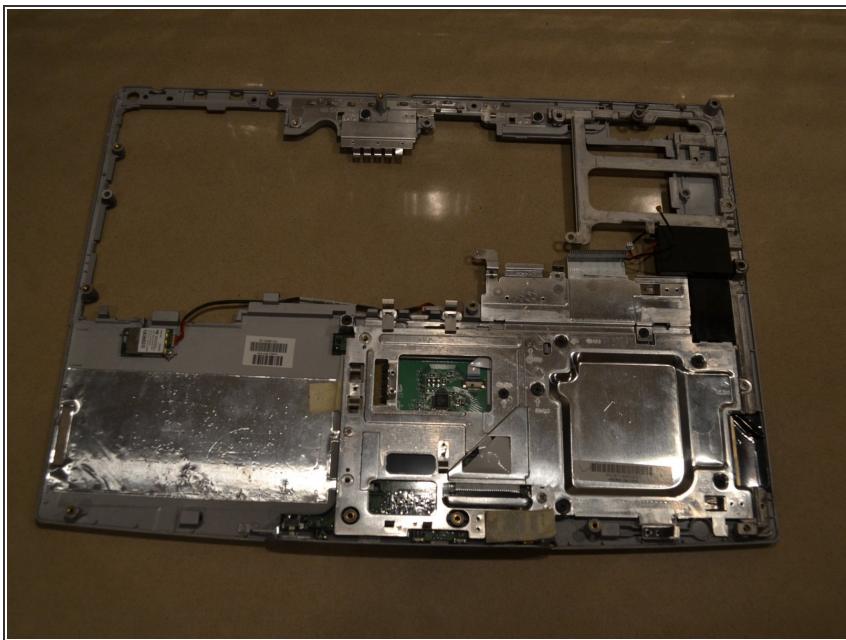
⚠ Working and/or handling CCFL displays is dangerous as they contain Mercury and run at extremely high voltages.

Step 19



- Separating the top from the bottom
- Carefully remove both speaker, SD card, Touchpad and Bluetooth module plugs and de-route the cable that leads to the wireless module (not pictured)
- After that you can lift the top from the base.

Step 20



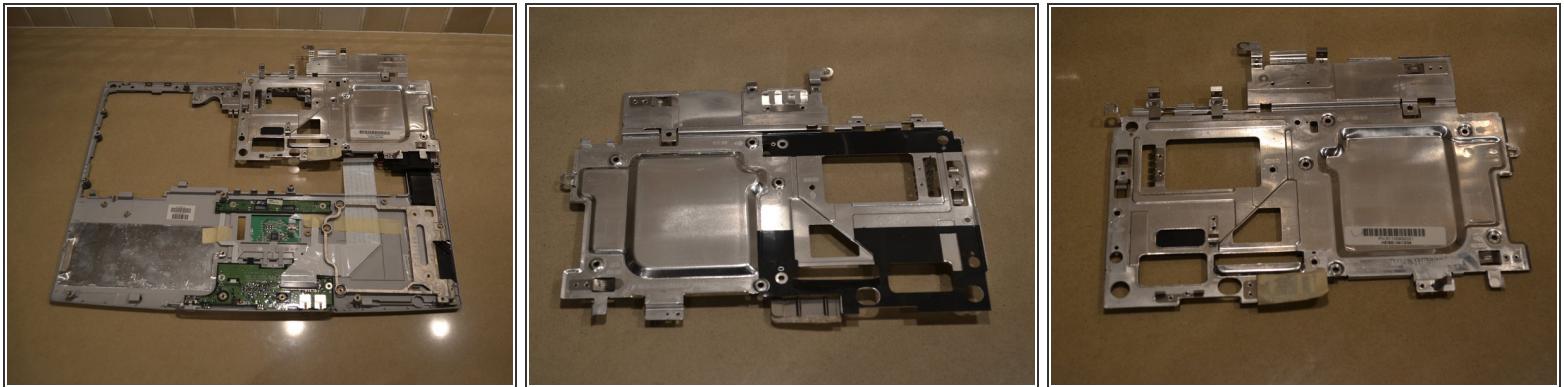
- The Interior of the top panel
- Contains the right hand speaker, Bluetooth module and Touchpad assembly

Step 21



- The Bluetooth module located above the battery or under the palmrest on the top right-hand side.
- It is an Actiontec BTM200

Step 22



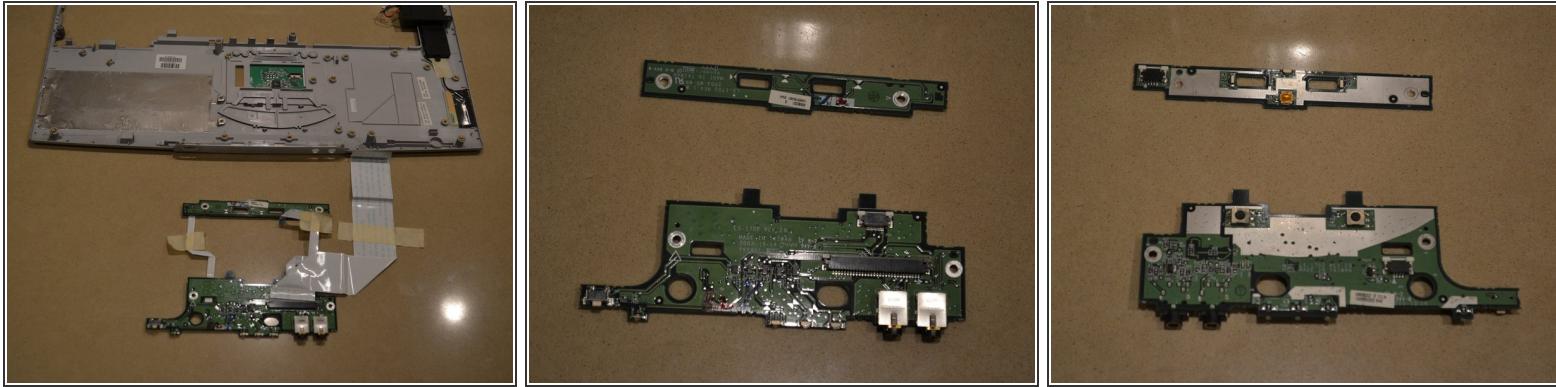
- The EMI shield for the optical drive and the touchpad
- Removing it gives access to the Touchpad and mouse button daughter boards.

Step 23



- The metal frame bracket
- It provides support for the notebook and makes it feel solid and rigid

Step 24



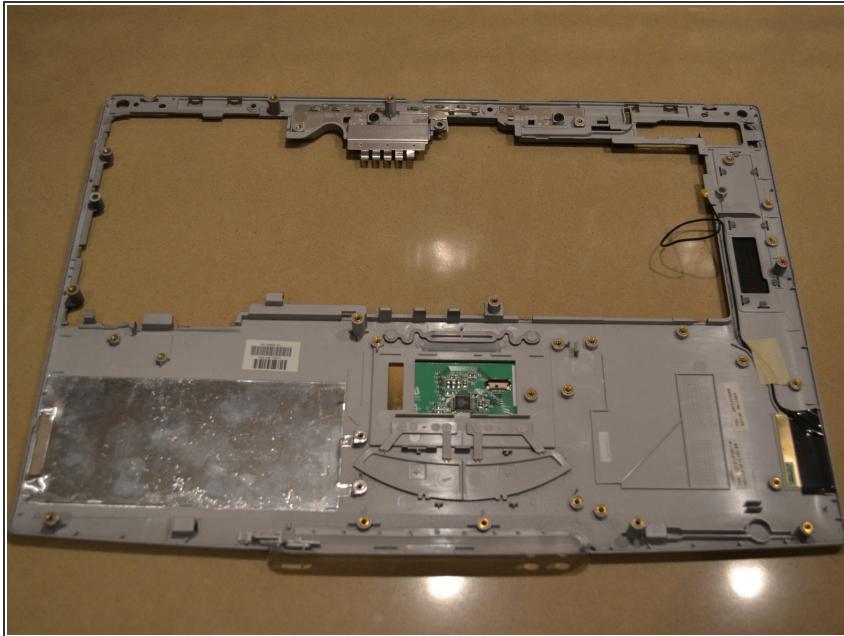
- Mouse and status LED daughter boards
- The daughter board on top controls the on/off mouse switch. The lower daughter board has status LED's, wireless on or off switch and headphone/microphone jacks
- *(i)* The touchpad sensor was integrated into the palmrest and therefore was un-removable.

Step 25



- Left hand speaker
 - Model Number: FG-CP630
 - Product Number: PK230005610
- 1.5 watts of decent quality sound output.

Step 26



- The bare upper base.
- All that is left that is not worth removing is an EMI shield and wireless network cable as well as the touchpad which is integrated into the upper base.

Step 27



- Now the best bit. The lower base
- It contains the motherboard as well as all the other important components such as the graphics card and CPU.

Step 28



- First thing to be removed from the motherboard is the fan.
- There are (currently) no screws securing the fan in place so removal is as simple as pulling it out.

 Make sure to unplug the fan first before removing.

 The wires are very delicate and are very hard to repair. Carefully pull by the plug.

Step 29



- The left hand speaker, metal frame and wireless communications.
- The wireless (gray) cable attaches to the frame so the frame can act like an antenna.
- The speaker has the model number PK230005710.
- This speaker also provides 1.5 watts of sound output.

Step 30



- The SD card reader is located right at the front of the computer and it's screwed into the base with a single screw.
- The model number is LS-1704.
- Manufactured on 09/05/2003 (9th of May, 2003)

Step 31

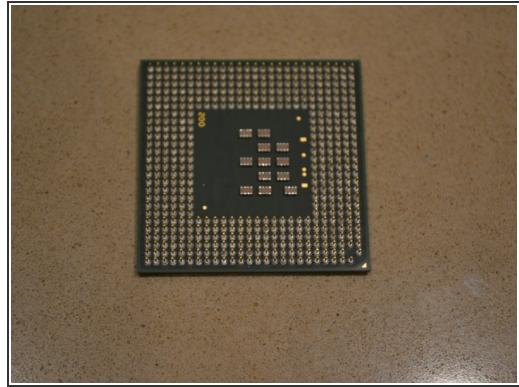


- Next out is the CPU heat-sink.
- It is held in with 4 sprung screws place around each corner of the CPU

⚠ The thermal paste on the CPU can be a potential health hazard. Try not to come into contact with skin.

ⓘ It is recommended (but not absolutely necessary) to re-apply thermal paste once the heat-sink has been removed to avoid overheating issues.

Step 32



- And finally, the CPU
- It's an Intel Celeron M 1.8GHz Single Core with 256k of cache.
- 55 million Processing Die Transistors
- 400MHz Front Side Bus (FSB)
- Removal is as easy as turning the locking screw half a turn anti-clockwise to unlock and to then carefully lift up to remove.

(i) CPU's are very delicate especially the pins and the thermal paste residue presents a potential health hazard.

Step 33



- The Modulator Demodulator (or Modem)
- It is an Ambit Microsystems T60M283.11

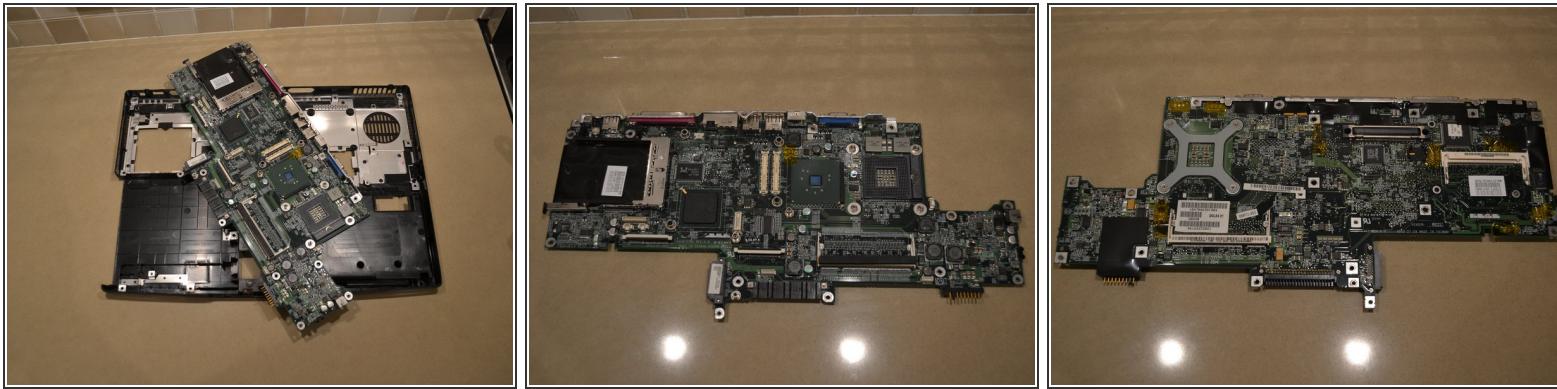
Step 34



- Underneath an EMI shield (not pictured) we find the ATI Mobility Radeon 9200 graphics card.
- 64mb of dedicated graphical goodness
- It is not integrated into the motherboard so if it fails it can be replaced individually rather than having a whole motherboard or CPU replacement.

(i) The notebook was available with the option of 32mb or 64mb dedicated graphics cards.

Step 35



- The removal of the motherboard.
- The release button for the expansion card slot must be pressed and held in, in order to remove the motherboard.
- Model Number A-1701 REV:2.0
- Manufactured on the 9th of July, 2003

Step 36



- All the parts that made up the laptop.

To reassemble your device, follow these instructions in reverse order.