Splitting the Atom: Inside the Eee PC 901

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Inside the Asus Eee PC 901

Manufacturer: Asus

Splitting the Atom – A look inside the 901

Yet again my inner seven year old has taken hold of me and insisted I find out what's inside the new Eee PC 901 without general consideration about how it goes back together. It doesn't seem all that long ago when we broke the Eee PC 900 open to see what was inside its green, silicon innards, and now we're doing the same with the arguably more interesting 901.

After all, everyone seems genuinely excited by the prospects of Intel's Atom processor family.

If you've been between rock and hard place for the past few weeks, Asus announced the new Eee PC 901 and Eee PC 1000 at Computex Taipei earlier this month - we published our first impressions of the 901 last Friday.

Both feature Intel's new Atom processors, with the smaller version being very similar to the older Eee PC 900, which used the same hardware as the original Eee PC 701, but featured a larger 8.9" screen and a higher capacity SSD.

We break things so you don't have to...

... Unless you want to - and then we're right behind you!

Getting in is relatively easy, providing you know where to look. You'll first need to remove the battery and take out all the screws on the underside (there should be 13 in total), including the one for the flap that hides the non-warranty voidable removable parts.


DIMM1

Once that's out, take out the 16GB SSD and the single DDR2 memory module - note if you want to upgrade you'll have to replace this DIMM with a bigger one since there's only one socket available in the 901. We're still keen to try this 16GB SSD in another notebook and we'd love to know how much of the 901's BOM (bill of materials) is taken up by the SSD.

To the left of the SSD slot and above the DIMM socket, there is the Wireless 802.11n module. Both antennas are connected to it - they run up and around the 8.9" LCD screen.

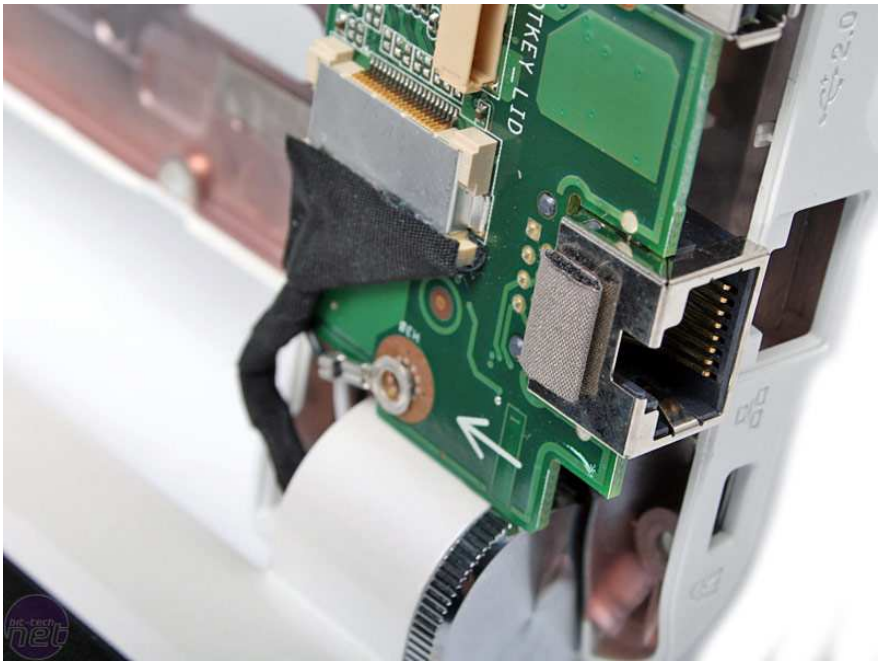
Next, you'll need to flip the 901 over and attack the keyboard as there are also screws underneath there too! In the top there are three very subtle clips that hold the keyboard in remarkably well and you'll need find a couple of strong but thin implements to remove them - we used a pair of watchmaker's screwdrivers (note: cocktail sticks don't work before you try).

With screwdrivers in hand, you need to simultaneously pop the keyboard upwards from both sides, while pushing the clips back into the plastic to remove it without damaging anything.

Using a hammer is tempting at this point.

Under the keyboard there are another six screws - including the one that voids your warranty if you undo it! This metal sheet, like the 900 and 701 models, acts as a heatsink for the CPU, North Bridge and south bridge. There is a small fan included too, which sucks in air from the bottom, passes air over the heatsink sheet and then vents it out the front and opposite side.

Once you've undone these (and voided your warranty in the process), you can gently run that same thin blade around the plastic edges to separate the top piece from the bottom. There are some clipping parts at the sides but just wiggle them gently to coax it off.



To get the motherboard out, you'll first need to remove two screws from the top corners, then the sides need to be gently prised out of their plastic surrounds. We recommend taking the side out with the audio connectors first because the VGA socket is buried in deeper than these are. There are a few wires clipped in too that you need to be aware of, so make a note of what you've undone as you remove the cables from the PCB.

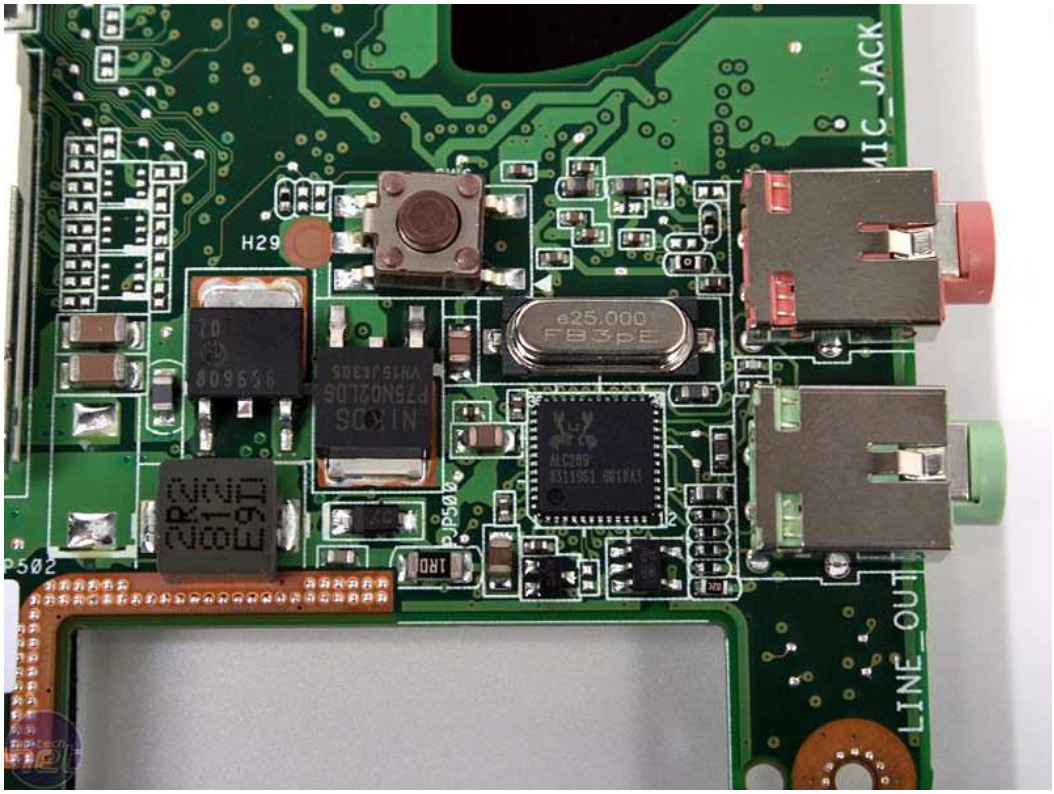
Top side, under side

After removing the PCB, you've now got access to the integrated Bluetooth adapter and 4GB SSD card that's now interestingly *not* soldered to the PCB, which allows for a potential upgrade in the future - however it's worth noting that you can't just buy two 16GB modules, because they aren't the same physical size. There is a spare space above this though labeled "IDE3" for potential expansion, as well as solder points on the motherboard labeled "3GCard" hinting a possible future, very mobile product line?

4GB primary SSD and … AzureWare 802.11n WiFi module

The 802.11n Wireless is handled by the AzureWare RT2700E card and HD sound with Dolby Sound Room option is driven by the Realtek ALC289 chipset. Above this there's a little button but we're not quite sure what it does since there's no corresponding hole on the outside of the plastic chassis!

The Bluetooth adapter and … the Realtek ALC289 sound codec



Can we get it back together again? Well, our attempts were successful with the Eee PC 900 without even a screw to spare (unlike a previous Rock notebook...) - well let me put it this way, don't take it apart, take pictures, edit those pictures and write the entire article *before* you then decide to put it back together again. At the time of writing the whole thing went back together in 15 minutes with one screw missing and the display not working.

Thankfully, Tim was on hand to dismantle and rebuild again during a spare lunchtime - the display worked fine at the second time of asking. Now I've just got to crawl around the office (*It's something he does on a regular basis - Ed.*) and find that one remaining screw!