

# ULTRA-INCONVENIENT

With Most New “Ultrabook” Laptops  
Users Can’t Change the Battery Themselves



Electronics  
**TakeBack**  
Coalition



*Photo: Bigstockphoto*

## What’s an Ultrabook?

The term “ultrabook” is trademarked by Intel to mean a new breed of very thin, very light, powerful laptops (not tablets or “netbooks”) that use 2nd or 3rd generation Intel chips, solid state disks, and has a longer battery life. The ultrabook is basically the PC manufacturers’ response to the MacBook Air notebook.

## Batteries That Users Can’t Replace

Following a trend first set by Apple, most (but not all) of these ultrabooks are designed so that consumers are not supposed to change the battery themselves. These batteries, sometimes called “integrated” or “embedded” batteries, are not the ones with the hard plastic casings that pass safety specs for users to handle and typically snap into place in the bot-

tom of your laptop. Non-user replaceable batteries have more of a stiff paper cover and are secured into the laptop with a fastener (usually screws) or, in the worst case, glue. They require the laptop enclosure to be removed, something the manufacturers don’t generally want users to do themselves.

## Why It Matters

We like the thin, sleek, light ultrabooks, so why does it matter whether we can change the battery in our laptops? Here’s why:

**Ultra inconvenient.** It’s consumer unfriendly (perhaps consumer hostile?) to require us to ship off our laptops for several days to the service facility just to change a battery. A new battery shouldn’t be a repair – it should be something we can purchase and install ourselves.

**Discourages longer use and reuse.** It’s much more sustainable to prolong the life of a computer and refurbish it for a second owner to “reuse” it than it is to simply recycle it. So it’s important that manufacturers make it easy to use our products as long as possible, and then to refurbish them for subsequent owners.

One thing that makes this harder is requiring the user to go back to the manufacturer to install a new battery (or for any basic repair or upgrade). While some people (with the right tools) can figure out how to open up their laptops and replace the battery,

### Ultrabooks At a Glance

- Ultra thin: under 0.8 inches thick
- Ultra light: most are under 4 pounds
- Ultra fast: solid state drive
- “Rapid start” returns from standby mode in seconds
- Long lasting battery - 5 hours or more

many won't. Once the laptop is a year or two old, sending it back to the manufacturer (and paying for labor as well as an expensive battery) may become the point where the user simply replaces the otherwise working laptop. That's also the point where the laptop could be passed along to another owner, but not being able to easily replace the battery may well become an obstacle to reusing it.

If we are serious about wanting to extend the life of these products, then it should be as easy to replace their batteries as it is to replace the batteries in a flashlight.

**Ultra unnecessary.** While some companies will say that user-replaceable batteries don't fit in the new ultra-thin laptops, this report shows that some manufacturers have been able to figure out how to do it, albeit in the thicker end of thin profiles.

### Which Ultrabooks Have User-Replaceable Batteries?

We looked at most of the leading manufacturers' ultrabooks that are currently on the market (or about to be released) in the U.S. to see if they are designed to allow the consumers to change their own batteries. Here's what we found:

- Most ultrabooks are designed with batteries that users aren't supposed to replace. **Only Sony Vaio T13 and HP (Elite Book Folio 9470) have ultrabooks with user replaceable batteries.** Vizio says theirs are user-replaceable, but they actually require the user to open up the laptop and it voids

your battery warranty if you replace it yourself;

- In many cases, it isn't very difficult for careful users to replace their own battery, if they have the right tools and a little information. (See chart on page 5.) HP, Dell, and Lenovo provide instructions in their online service manuals;
- The most extreme example of a design making it difficult to replace the battery is the Apple MacBook Pro with retina display, where the battery is glued in with industrial strength glue.
- Most of the manufacturers' product specs do NOT disclose that the battery is not replaceable, or what you will need to return the computer to the manufacturer to change the battery.

### Even Simple Battery Replacements Will Void Some Warranties

With several of the manufacturers, if users do replace their own batteries, they will void their product warranty, even though it may be very easy to do. Acer and Dell say this will void warranties only if the battery replacement causes damage. For Vizio, it only voids the battery warranty, not the product warranty. Changing HP ultrabook batteries won't void warranties for laptops purchased from their business division, but it will void warranties for their consumer laptops.

Many companies have a separate warranty for the battery than for the rest of the product. Battery warranties for most companies are only one year (2 years for Vizio if you buy from them directly).

Sony's VAIO T series is the only ultrabook currently for sale that has a user-replaceable battery pack.



## Manufacturers Don't Disclose That Users Can't Replace Batteries

We were surprised how difficult it is to find information on whether the batteries are user-friendly, or require a service call to replace. This information is pretty invisible on most manufacturer websites even in the detailed product specifications.



**Only Dell, Toshiba, and Apple** give clear information about this in their technical specs. Dell has the clearest statement: "Battery is built in to the laptop and is not replaceable by the customer." Toshiba says, "not user replaceable." Apple says "built in battery."

On one of their ultrabooks, Acer says, "embedded battery," but we are not sure a user will know what that means. In its PC product comparison, Vizio says they have a "removable battery," although it will void your battery warranty if you actually remove it, and it requires opening up the laptop.

Of the two ultrabooks which actually have user-removable batteries, only HP states so in the product description (Elite Book Folio 9470, not yet on the market). Sony's Vaio T13 has a replaceable battery pack, but the product specs make no mention of it.

*Laptop above is designed with user replaceable battery. In laptop below (MacBook Air) the battery can't be removed without taking off the back and disconnecting the battery, which will void the warranty. Photos courtesy of iFixit.*



## Product Reviews Rarely Mention Whether Battery is Removable

Most of the product reviews in the media make no mention of whether the battery is user removable. A notable exception is [www.liliputing.com](http://www.liliputing.com), which frequently includes this metric in their ultrabook reviews.

Apple users have resigned themselves to this inconvenience (first introduced in iPods years ago), but many of them have Apple stores where they can make an appointment for on-the-spot battery changes. Not so with most of the other manufacturers.

We think many non-Apple laptop customers, who are just making the transition to an ultrabook, are in for a surprise when they learn the hard way that they will need to send their laptops away for several days just to get a new battery.

## Current Designs Show the Need for EPEAT Program

This design trend shows why we need programs like EPEAT, where electronic products are graded against environmentally preferable purchasing criteria. The EPEAT standards for computers, which are about to be revised, currently have no criteria that reward companies who are prolonging the life of their products by making laptop and tablet batteries user-replaceable.

## Our Suggestions to Ultrabook Manufacturers

- **Design changes.** We hope that with the next release of ultrabooks, manufacturers will use their talents for innovation to modify their designs to include user-removable batteries – the kind that users are meant to handle and that we can easily swap out - like Sony and HP have

done.

- **Don't make battery changes void the warranty.** In the meantime, they need to modify their policies so that we don't void our product warranties just by changing the batteries.
- **Transparency.** They should be much more transparent in their product specs so consumers can clearly see that the product does not have a user-changeable battery, and that changing their battery will require a manufacturer "repair."

## Our Suggestions For Consumers

If you are buying an ultrabook, or any of the new very thin laptops:

- **Be sure to ask** whether you can change the battery yourself.
- If not (or if it will void your warranty) you might want to **consider a different brand** unless you don't mind sending your laptop off to the service depot for a battery change.
- Another option is to make sure the **level of warranty service** you select will cover the labor for battery changes.
- **Give feedback.** If this is an issue that concerns you, let the sales staff know.

## Changing Laptop Batteries

With most of these ultrabooks, it's not actually very difficult to remove and replace the battery (see chart next page). It does require removing the laptop enclosure, for which you may need a special screwdriver. These batteries have a connector which must be carefully disconnected, and then the fasteners (usually screws) holding the battery in must be removed. Batteries should be handled carefully and safely recycled. Be sure



to consult your user manual, or the service manual if available, for safety precaution information.

Tools for opening up computers and making various repairs can be purchased from a group called [iFixit](#), which also publishes free manuals and how-to videos for making all kinds of common repairs on computers, phones, and other equipment.

## Recycling Rechargeable Batteries

Laptop batteries should NEVER go into the trash. They

contain some toxic ingredients (that don't belong in landfills), and they can also be dangerous in municipal landfill operations (they can explode or catch fire).

These batteries can be recycled safely with Call 2 Recycle, run by the Rechargeable Battery Recycling Corporation (RBRC). You can find a drop-off location [here](#).



Which Ultrabooks Have User-Replaceable Batteries?							
Company & Laptop	How thin is laptop? <small>At thickest part</small>	Has a User Replaceable Battery?	Is "Non-User Replaceable" battery fairly easy to remove?	DISCLOSURE Product spec tells you if it's replaceable?	Replacing battery yourself voids product warranty?	EPEAT Rating *	Info on how to remove "non-removable" battery
<b>ACER</b>							
Aspire S3	0.51 inch	No	Somewhat. Lots to disassemble first.	Yes, says "embedded battery"	Not unless it damages the laptop	None	<a href="#">Tech Republic teardown</a>
Aspire S5	0.6 inch	No	Data unavailable	No		None	
Aspire Ultra M5	0.81 inch	No	Data unavailable	No		None	
<b>APPLE</b>							
MacBook Air 13" Mid 2012	0.68 inch	No	Yes	Yes, says "built in battery"	Yes	Gold	<a href="#">Teardown from iFixit</a>
MacBook Pro 15" w/ Retina 2012	0.71 inch	No	No, Battery is glued inside.	Yes, says "built in battery"	Yes	Gold	<a href="#">Tear down from iFixit</a>
<b>ASUS</b>							
Zenbook UX31	0.7 inch	No	Yes	No	Yes	None	<a href="#">Link</a>
Zenbook UX21	0.67 inch	No	Yes	No		None	<a href="#">Link</a>
<b>DELL</b>							
XPS 13	0.71 inch	No	Yes very easy	Yes	Not unless it damages the laptop.	Silver	<a href="#">Video from Parts-People.</a>
XPS 14	0.81 inch	No	Yes	Yes		Silver	<a href="#">Link</a>
Inspiron 14z	0.83 inch	No	Yes but many parts to remove	No		Silver	<a href="#">Manual</a>
Continued next page							

\* EPEAT stands for Environmentally Preferable Electronics Assessment Tool, a voluntary program whereby manufacturers register their electronic products to show how they have been evaluated against voluntary environmental standards. The current EPEAT standard for computers is 6 years old. The process to update it will begin soon. There is no EPEAT "product longevity" criterion that encourages user-replaceable batteries.

"TORX" is a brand name for various sizes of 6 point screwhead, requiring special TORX screwdrivers to remove.

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<b>HP</b>							
Envy 4 & Envy Pro	0.78 in	No	Yes	No	Yes if you are purchasing via HP's Home - Home office division. It will not void if you buy from business division, assuming you don't damage computer.	Silver	<a href="#">HP Manual</a>
Envy Spectre XT 13 -2000 series	0.69 inch	No	Yes. Remove base, disconnect & unscrew battery.	No		Gold	<a href="#">Spectre manual</a>
Envy Spectre 14 3000 or 3100	0.79	No	VERY easy with Torx screwdriver	No		Gold	<a href="#">HP Manual</a>
Folio 13	0.7 inch	No	Yes, but must remove bottom, keyboard, & top cover first	No		Silver	<a href="#">Folio manual</a>
Envy Spectre XT Pro	0.69 inch	No	Yes very easy	No		Silver	<a href="#">Spectre manual</a>
Envy 6-1000	0.78 inch	No	Yes, but must remove some parts	No		Silver	<a href="#">Disassembly guide</a>
EliteBook Folio 9470m 14"	0.75 inch	<b>YES</b>	Not yet on market	Yes	NA	Not on market yet until end of 2012	
<b>LENOVO</b>							
IdeaPad u310	0.7 inch	No	Yes very easy	No	Yes	None	<a href="#">Manual 310</a>
IdeaPad u410	0.8 inch	No	Yes very easy	No		None	<a href="#">Manual 410</a>
IdeaPad u300s	0.59 inch	No	Yes very easy	No		None	<a href="#">Manual</a>
<b>SAMSUNG</b>							
Series 5 13.3"	0.69 inch	No	Data unavailable	No	Yes	Gold	
Series 5 14"	0.82 inch	No	Data unavailable	No		Gold	
Series 9 13" 2012	0.58 inch	No	Yes	No		Gold	<a href="#">Tech Republic</a>
<b>SONY</b>							
Sony Vaio T13	0.71 inch	<b>YES</b>	NA	No	No	None	<a href="#">Manual</a>
<b>TOSHIBA</b>							
Portege Z830/835	0.63 inch	No	Yes, Torx needed	Yes, but hard to find ino	Yes	Gold	
Portege Z930/935	0.63 inch	No	Data unavailable			Gold	
<b>VIZIO</b>							
Thin & Light 14"	0.67 inch	No	Yes	No	Only voids battery warranty.	None	
Thin & Light 15"	0.68 inch	No	Yes	No		None	