

**ThinkPad**

# Hardware Maintenance Manual

**ThinkPad Tablet**

**Note:** Before using this information and the product it supports, be sure to read the general information under “Notices” on page 59.

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## About this manual

This manual contains service and reference information for the following ThinkPad® products.

<b>Machine</b>	<b>Machine type (MT)</b>
ThinkPad Tablet	1838, 1839

### **Important:**

- This manual is intended only for trained service technicians who are familiar with ThinkPad products. Use this manual along with the advanced diagnostic tests to troubleshoot problems effectively.
- Before servicing a ThinkPad product, be sure to read all the information under Chapter 1 “Safety information” on page 1 and Chapter 2 “Important service information” on page 19.



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## Chapter 1. Safety information

This chapter presents following safety information that you need to be familiar with before you service a ThinkPad Tablet.

- “General safety” on page 1
- “Electrical safety” on page 1
- “Safety inspection guide” on page 3
- “Handling devices that are sensitive to electrostatic discharge” on page 3
- “Grounding requirements” on page 4
- “Safety notices (multilingual translations)” on page 4

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### General safety

Follow these rules to ensure general safety:

- Observe good housekeeping in the area of the machines during and after maintenance.
- When lifting any heavy object:
  1. Make sure that you can stand safely without slipping.
  2. Distribute the weight of the object equally between your feet.
  3. Use a slow lifting force. Never move suddenly or twist when you attempt to lift.
  4. Lift by standing or by pushing up with your leg muscles; this action removes the strain from the muscles in your back. *Do not attempt to lift any object that weighs more than 16 kg (35 lb) or that you think is too heavy for you.*
- Do not perform any action that causes hazards to the customer, or that makes the equipment unsafe.
- Before you start the machine, make sure that other service technicians and the customer's personnel are not in a hazardous position.
- Place removed covers and other parts in a safe place, away from all personnel, while you are servicing the machine.
- Keep your toolcase away from walk areas so that other people will not trip over it.
- Do not wear loose clothing that can be trapped in the moving parts of a machine. Make sure that your sleeves are fastened or rolled up above your elbows. If your hair is long, fasten it.
- Insert the ends of your necktie or scarf inside clothing or fasten it with a nonconductive clip, about 8 centimeters (3 inches) from the end.
- Do not wear jewelry, chains, metal-frame eyeglasses, or metal fasteners for your clothing.

**Attention:** Metal objects are good electrical conductors.

- Wear safety glasses when you are hammering, drilling, soldering, cutting wire, attaching springs, using solvents, or working in any other conditions that might be hazardous to your eyes.
- After service, reinstall all safety shields, guards, labels, and ground wires. Replace any safety device that is worn or defective.
- Reinstall other parts that you have removed.

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### Electrical safety

Observe the following rules when working on electrical equipment.

**Important:**

- Use only approved tools and test equipment. Some hand tools have handles covered with a soft material that does not insulate you when working with live electrical currents.
- Many customers have, near their equipment, rubber floor mats that contain small conductive fibers to decrease electrostatic discharges. Do not use this type of mat to protect yourself from electrical shock.
- Find the room emergency power-off (EPO) switch, disconnecting switch, or electrical outlet. If an electrical accident occurs, you can then operate the switch or disconnect the micro-USB cable quickly.
- Do not work alone under hazardous conditions or near equipment that has hazardous voltages.
- Disconnect all power before:
  - Performing a mechanical inspection
  - Working near power supplies
  - Removing or installing main units
- Before you start to work on the machine, disconnect the micro-USB cable. If you cannot unplug it, power off the wall box that supplies power to the machine, and lock the wall box in the off position.
- If you need to work on a machine that has *exposed* electrical circuits, observe the following precautions:
  - Ensure that another person, familiar with the power-off controls, is near you.

**Attention:** Another person must be there to switch off the power, if necessary.

- Use only one hand when working with powered-on electrical equipment; keep the other hand in your pocket or behind your back.

**Attention:** An electrical shock can occur only when there is a complete circuit. By observing the above rule, you may prevent a current from passing through your body.

- When using testers, set the controls correctly and use the approved probe leads and accessories for that tester.
- Stand on suitable rubber mats (obtained locally, if necessary) to insulate you from grounds such as metal floor strips and machine frames.

Observe the special safety precautions when you work with very high voltages; Instructions for these precautions are in the safety sections of maintenance information. Use extreme care when measuring high voltages.

- Regularly inspect and maintain your electrical hand tools for safe operational condition.
- Do not use worn or broken tools and testers.
- *Never assume* that power has been disconnected from a circuit. First, *check* that it has been powered off.
- Always look carefully for possible hazards in your work area. Examples of these hazards are moist floors, nongrounded power extension cables, power surges, and missing safety grounds.
- Do not touch live electrical circuits with the reflective surface of a plastic dental mirror. The surface is conductive; such touching can cause personal injury and machine damage.
- Do not service the following parts *with the power on* when they are removed from their normal operating places in a machine:
  - Power supply units
  - Pumps
  - Motor generators
  - Similar units to listed above
 This practice ensures correct grounding of the units.
- If an electrical accident occurs:
  - Use caution; do not become a victim yourself.
  - Switch off power.
  - Send another person to get medical aid.



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## Safety inspection guide

The purpose of this inspection guide is to assist you in identifying potentially unsafe conditions. As each machine was designed and built, required safety items were installed to protect users and service technicians from injury. This guide addresses only those items. You should use good judgment to identify potential safety hazards due to attachment of non-ThinkPad features or options not covered by this inspection guide.

If any unsafe conditions are present, you must determine how serious the apparent hazard could be and whether you can continue without first correcting the problem.

Consider these conditions and the safety hazards they present:

- Electrical hazards, especially primary power (primary voltage on the frame can cause serious or fatal electrical shock)
- Explosive hazards, such as a damaged CRT face or a bulging capacitor
- Mechanical hazards, such as loose or missing hardware

To determine whether there are any potentially unsafe conditions, use the following checklist at the beginning of every service task. Begin the checks with the power off and the micro-USB cable disconnected.

Checklist:

1. Check exterior covers for damage (loose, broken, or sharp edges).
2. Turn off the tablet.
3. Disconnect the power supply of the internal battery by pressing the emergency reset button inside the emergency reset hole using a straightened paper clip.
4. Disconnect the micro-USB cable.
5. Check the micro-USB cable for the following:
  - a. Make sure that a third-wire ground connector is in good condition. Use a meter to measure the third-wire ground continuity, and make sure that the continuity between the external ground pin and the frame ground is 0.1 ohm or less.
  - b. The micro-USB cable is the type specified in the parts list.
  - c. Insulation is not frayed or worn.
6. Remove the LCD module assembly.
7. Check for cracked or bulging internal batteries.
8. Check for any obvious non-ThinkPad alterations. Use good judgment as to the safety of any non-ThinkPad alterations.
9. Check inside the unit for any obvious unsafe conditions, such as metal filings, contamination, water or other liquids, or signs of fire or smoke damage.
10. Check for worn, frayed, or pinched cables.
11. Check that the internal battery fasteners (screws or rivets) have not been removed or tampered with.

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## Handling devices that are sensitive to electrostatic discharge

Any tablet part containing transistors or integrated circuits (ICs) should be considered sensitive to electrostatic discharge (ESD). ESD damage can occur when there is a difference in charge between objects. Protect against ESD damage by equalizing the charge so that the machine, the part, the work mat, and the person handling the part are all at the same charge.

**Notes:**

1. Use product-specific ESD procedures when they exceed the requirements noted here.
2. Make sure that the ESD protective devices you use have been certified (ISO 9000) as fully effective.

When handling ESD-sensitive parts:

- Keep the parts in protective packages until they are inserted into the product.
- Avoid contact with other people.
- Wear a grounded wrist strap against your skin to eliminate static on your body.
- Prevent the part from touching your clothing. Most clothing is insulative and retains a charge even when you are wearing a wrist strap.
- Use a grounded work mat to provide a static-free work surface. The mat is especially useful when handling ESD-sensitive devices.
- Select a grounding system, such as those listed below, to provide protection that meets the specific service requirement.

**Note:** The use of a grounding system to guard against ESD damage is desirable but not necessary.

- Attach the ESD ground clip to any frame ground, ground braid, or green-wire ground.
- When working on a double-insulated or battery-operated system, use an ESD common ground or reference point. You can use coax or connector-outside shells on these systems.
- Use the round ground prong of the ac plug on ac-operated tablets.

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## Grounding requirements

Electrical grounding of the tablet is required for operator safety and correct system function. Proper grounding of the electrical outlet can be verified by a certified electrician.

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## Safety notices (multilingual translations)

The safety notices in this section are provided in the following languages:

- English
- Arabic
- Brazilian Portuguese
- French
- German
- Hebrew
- Japanese
- Korean
- Spanish
- Traditional Chinese



### DANGER

**Before the computer is powered on after FRU replacement, make sure all screws, springs, and other small parts are in place and are not left loose inside the computer. Verify this by shaking the computer and listening for rattling sounds. Metallic parts or metal flakes can cause electrical shorts.**



## DANGER

Some standby batteries contain a small amount of nickel and cadmium. Do not disassemble a standby battery, recharge it, throw it into fire or water, or short-circuit it. Dispose of the battery as required by local ordinances or regulations. Use only the battery in the appropriate parts listing. Use of an incorrect battery can result in ignition or explosion of the battery.



## DANGER

The battery pack contains small amounts of nickel. Do not disassemble it, throw it into fire or water, or short-circuit it. Dispose of the battery pack as required by local ordinances or regulations. Use only the battery in the appropriate parts listing when replacing the battery pack. Use of an incorrect battery can result in ignition or explosion of the battery.



## DANGER

The lithium battery can cause a fire, an explosion, or a severe burn. Do not recharge it, remove its polarized connector, disassemble it, heat it above 100°C (212°F), incinerate it, or expose its cell contents to water. Dispose of the battery as required by local ordinances or regulations. Use only the battery in the appropriate parts listing. Use of an incorrect battery can result in ignition or explosion of the battery.



## DANGER

If the LCD breaks and the fluid from inside the LCD gets into your eyes or on your hands, immediately wash the affected areas with water for at least 15 minutes. Seek medical care if any symptoms from the fluid are present after washing.



## DANGER

To avoid shock, do not remove the plastic cover that protects the lower part of the inverter card.



## DANGER

Though the main batteries have low voltage, a shorted or grounded battery can produce enough current to burn personnel or combustible materials.



## DANGER

Unless hot swap is allowed for the FRU being replaced, do as follows before removing it: power off the computer, unplug all power cords from electrical outlets, remove the battery pack, and disconnect any interconnecting cables.



خطر

قبل اعادة تشغيل الحاسب بعد الانتهاء من استبدال FRU، تأكد من أنه قد تم اعادة كل من المسامير و السوست وكل الأجزاء الصغيرة الأخرى في أماكنهم ولم يتم قفدهم داخل الحاسب. ويمكن التحقق من ذلك عن طريق هز الحاسب والاستماع لأي صوت صاخب يصدر منه. قد تؤدي الأجزاء أو الرقائق المعدنية الى حدوث دائرة قصر.



خطر

تحتوي بعض البطاريات الاحتياطية على كمية صغيرة من مادتي النيكل والكاديوم. لا تقم بفك أو اعادة شحن البطارية الاحتياطية ولا تقم أيضا بالقاءها في النار أو الماء ولا تتسبب في احداث دائرة قصر بها. قم بالتخلص من البطارية كما هو موضح في القوانين المحلية. استخدم نوع البطارية المحدد والذي يوصى باستخدامه. حيث أنه قد يؤدي استخدام نوع بطارية غير صحيح الى اشتعالها أو انفجارها.



خطر

تحتوي حزمة البطارية على كمية صغيرة من مادة النيكل. لا تقم بفكها أو القاءها في النار أو الماء ولا تتسبب في احداث دائرة قصر بها. تخلص من حزمة البطارية وفقا لما هو موضح في القوانين المحلية. قم، عند استبدال حزمة البطارية، باستخدام الأنواع المحددة فقط والتي يوصى باستخدامها. حيث أنه قد يؤدي استخدام نوع بطارية غير صحيح الى اشتعالها أو انفجارها.



خطر

قد تتسبب بطارية الليثيوم في حدوث حريق أو انفجار أو حدوث حروق شديدة. لا تقم باعادة شحن البطارية أو ازالة موصل الاستقطاب الخاص بها ولا تحاول أيضا فكها أو تسخينها لأكثر من ١٠٠ درجة مئوية (٢١٢ فهرنهايت) أو حرقها أو تعريض محتويات الخاتمة الخاصة بها للماء. قم بالتخلص من البطارية وفقا لما هو موضح في القوانين المحلية. استخدم نوع البطارية المحدد والذي يوصى باستخدامه. حيث أنه قد يؤدي استخدام نوع بطارية غير صحيح الى اشتعالها أو انفجارها.



خطر

إذا ما انكسرت شاشة LCD ولامس السائل الداخلي عينيك أو يديك، قم في الحال بغسلهما بالماء لمدة لا تقل عن ١٥ دقيقة. إذا ما وجدت أي أعراض بعد الغسل اطلب عندئذ المساعدة الطبية.



خطر

لتجنب التعرض لأي صدمات، لا تقم بإزالة الغطاء البلاستيكي الذي يحمي الجزء الأسفل من بطاقة العاكس.



خطر

على الرغم من أن البطاريات الرئيسية يكون لها جهد منخفض، إلا أنه قد تقوم البطاريات التي حدث قصور بها أو التي تم توصيلها أرضيا بإصدار تيار يكفي لحدوث حروق للأفراد أو تعرض المواد القابلة للاشتعال للحريق.



خطر

ما لم يتم السماح بالتبديل الفوري لأي FRU الجاري استبداله بدون ضرورة اغلاق النظام، قم بتنفيذ ما يلي قبل ازالته. قم بإيقاف تشغيل الحاسب ونزع كل أسلاك الطاقة من المخارج الكهربائية وقم أيضا بإزالة حزمة البطارية ثم قم بفصل أي كابلات متصلة.



## PERIGO

Antes de ligar o computador após a substituição da FRU, certifique-se de que todos os parafusos, molas e outras peças pequenas estejam no lugar e não estejam soltos dentro do computador. Verifique isso sacudindo o computador e procurando ouvir sons de peças soltas. Peças metálicas ou lascas de metal podem causar curto-circuito.



## PERIGO

Algumas baterias reserva contêm uma pequena quantidade de níquel e cádmio. Não desmonte uma bateria reserva, recarregue-a, jogue-a no fogo ou na água, ou deixe-a entrar em curto-circuito. Descarte a bateria conforme requerido pelas leis ou regulamentos locais. Use somente a bateria nas partes listadas apropriadas. O uso de uma bateria incorreta pode resultar em combustão ou explosão da bateria.



## PERIGO

O pacote da bateria contém uma pequena quantidade de níquel. Não o desmonte, jogue-o no fogo ou na água, ou deixe-o entrar em curto-circuito. Descarte o pacote da bateria conforme requerido pelas leis ou regulamentos locais. Use somente a bateria nas partes listadas apropriadas ao substituir o pacote da bateria. O uso de uma bateria incorreta pode resultar em combustão ou explosão da bateria.



#### PERIGO

A bateria de lítio pode causar incêndio, explosão ou graves queimaduras. Não a recarregue, remova seu conector polarizado, desmonte-a, aqueça-a acima de 100°C (212°F), incinere-a, ou exponha o conteúdo de sua célula à água. Descarte a bateria conforme requerido pelas leis ou regulamentos locais. Use somente a bateria nas partes listadas apropriadas. O uso de uma bateria incorreta pode resultar em combustão ou explosão da bateria.



#### PERIGO

Se o LCD quebrar e o fluido de dentro dele entrar em contato com seus olhos ou com suas mãos, lave as áreas afetadas imediatamente com água durante pelo menos 15 minutos. Procure cuidados médicos se algum sintoma causado pelo fluido surgir após a lavagem.



#### PERIGO

Para evitar choque elétrico, não remova a capa plástica que protege a parte inferior da placa inversora.



#### PERIGO

Embora as principais baterias possuam baixa voltagem, uma bateria em curto-circuito ou aterrada pode produzir corrente o bastante para queimar materiais de pessoal ou inflamáveis.



#### PERIGO

A menos que uma hot swap seja permitida para a FRU que está sendo substituída, faça o seguinte antes de removê-la: desligue o computador, desconecte todos os cabos de energia das tomadas, remova o pacote de baterias e desconecte quaisquer cabos de interconexão.



## DANGER

Avant de remettre l'ordinateur sous tension après remplacement d'une unité en clientèle, vérifiez que tous les ressorts, vis et autres pièces sont bien en place et bien fixées. Pour ce faire, secouez l'unité et assurez-vous qu'aucun bruit suspect ne se produit. Des pièces métalliques ou des copeaux de métal pourraient causer un court-circuit.



## DANGER

Certaines batteries de secours contiennent du nickel et du cadmium. Ne les démontez pas, ne les rechargez pas, ne les exposez ni au feu ni à l'eau. Ne les mettez pas en court-circuit. Pour les mettre au rebut, conformez-vous à la réglementation en vigueur. Lorsque vous remplacez la pile de sauvegarde ou celle de l'horloge temps réel, veillez à n'utiliser que les modèles cités dans la liste de pièces détachées adéquate. Une batterie ou une pile inappropriée risque de prendre feu ou d'exploser.



## DANGER

La batterie contient du nickel. Ne la démontez pas, ne l'exposez ni au feu ni à l'eau. Ne la mettez pas en court-circuit. Pour la mettre au rebut, conformez-vous à la réglementation en vigueur. Lorsque vous remplacez la batterie, veillez à n'utiliser que les modèles cités dans la liste de pièces détachées adéquate. En effet, une batterie inappropriée risque de prendre feu ou d'exploser.



## DANGER

La pile de sauvegarde contient du lithium. Elle présente des risques d'incendie, d'explosion ou de brûlures graves. Ne la rechargez pas, ne retirez pas son connecteur polarisé et ne la démontez pas. Ne l'exposez pas à une température supérieure à 100°C, ne la faites pas brûler et n'en exposez pas le contenu à l'eau. Mettez la pile au rebut conformément à la réglementation en vigueur. Une pile inappropriée risque de prendre feu ou d'exploser.



## DANGER

Si le panneau d'affichage à cristaux liquides se brise et que vous recevez dans les yeux ou sur les mains une partie du fluide, rincez-les abondamment pendant au moins quinze minutes. Consultez un médecin si des symptômes persistent après le lavage.



## DANGER

Afin d'éviter tout risque de choc électrique, ne retirez pas le cache en plastique protégeant la partie inférieure de la carte d'alimentation.



## DANGER

Bien que le voltage des batteries principales soit peu élevé, le court-circuit ou la mise à la masse d'une batterie peut produire suffisamment de courant pour brûler des matériaux combustibles ou causer des brûlures corporelles graves.



## DANGER

Si le remplacement à chaud n'est pas autorisé pour l'unité remplaçable sur site que vous remplacez, procédez comme suit avant de retirer l'unité : mettez l'ordinateur hors tension, débranchez tous les cordons d'alimentation des prises de courant, retirez le bloc de batterie et déconnectez tous les câbles d'interconnexion.



## VORSICHT

Bevor nach einem FRU-Austausch der Computer wieder angeschlossen wird, muß sichergestellt werden, daß keine Schrauben, Federn oder andere Kleinteile fehlen oder im Gehäuse vergessen wurden. Der Computer muß geschüttelt und auf Klappergeräusche geprüft werden. Metallteile oder-splitter können Kurzschlüsse erzeugen.



## VORSICHT

Die Bereitschaftsbatterie, die sich unter dem Diskettenlaufwerk befindet, kann geringe Mengen Nickel und Cadmium enthalten. Sie darf nur durch die Verkaufsstelle oder den IBM Kundendienst ausgetauscht werden. Sie darf nicht zerlegt, wiederaufgeladen, kurzgeschlossen, oder Feuer oder Wasser ausgesetzt werden. Die Batterie kann schwere Verbrennungen oder Verätzungen verursachen. Bei der Entsorgung die örtlichen Bestimmungen für Sondermüll beachten. Beim Ersetzen der Bereitschafts- oder Systembatterie nur Batterien des Typs verwenden, der in der Ersatzteilliste aufgeführt ist. Der Einsatz falscher Batterien kann zu Entzündung oder Explosion führen.





## VORSICHT

Akkus enthalten geringe Mengen von Nickel. Sie dürfen nicht zerlegt, wiederaufgeladen, kurzgeschlossen, oder Feuer oder Wasser ausgesetzt werden. Bei der Entsorgung die örtlichen Bestimmungen für Sondermüll beachten. Beim Ersetzen der Batterie nur Batterien des Typs verwenden, der in der Ersatzteilliste aufgeführt ist. Der Einsatz falscher Batterien kann zu Entzündung oder Explosion führen.



## VORSICHT

Die Systembatterie ist eine Lithiumbatterie. Sie kann sich entzünden, explodieren oder schwere Verbrennungen hervorrufen. Batterien dieses Typs dürfen nicht aufgeladen, zerlegt, über 100°C erhitzt oder verbrannt werden. Auch darf ihr Inhalt nicht mit Wasser in Verbindung gebracht oder der zur richtigen Polung angebrachte Verbindungsstecker entfernt werden. Bei der Entsorgung die örtlichen Bestimmungen für Sondermüll beachten. Beim Ersetzen der Batterie nur Batterien des Typs verwenden, der in der Ersatzteilliste aufgeführt ist. Der Einsatz falscher Batterien kann zu Entzündung oder Explosion führen.



## VORSICHT

Die Leuchtstoffröhre im LCD-Bildschirm enthält Quecksilber. Bei der Entsorgung die örtlichen Bestimmungen für Sondermüll beachten. Der LCD-Bildschirm besteht aus Glas und kann zerbrechen, wenn er unsachgemäß behandelt wird oder der Computer auf den Boden fällt. Wenn der Bildschirm beschädigt ist und die darin befindliche Flüssigkeit in Kontakt mit Haut und Augen gerät, sollten die betroffenen Stellen mindestens 15 Minuten mit Wasser abgespült und bei Beschwerden anschließend ein Arzt aufgesucht werden.



## VORSICHT

Aus Sicherheitsgründen die Kunststoffabdeckung, die den unteren Teil der Spannungswandlerplatine umgibt, nicht entfernen.



## VORSICHT

Obwohl Hauptbatterien eine niedrige Spannung haben, können sie doch bei Kurzschluß oder Erdung genug Strom abgeben, um brennbare Materialien zu entzünden oder Verletzungen bei Personen hervorzurufen.



## VORSICHT

Wenn ein Austausch der FRU bei laufendem Betrieb nicht erlaubt ist, gehen Sie beim Austausch der FRU wie folgt vor: Schalten Sie den Computer aus, ziehen Sie alle Netzkabel von den Netzsteckdosen ab, entfernen Sie den Akku und ziehen Sie alle miteinander verbundenen Kabel ab.



לפני הפעלת המחשב לאחר החלפת FRU יש לוודא שכל חברגים, הקפיצים, וחלקים קטנים אחרים נמצאים במקומם ואינם חופשיים לזוז בתוך המחשב. כדי לוודא זאת, יש לטלטל את המחשב ולהקשיב לגילוי קולות שקשוק. חלקי או שבבי מתכת עלולים לגרום לקצרים חשמליים.



סוללות המתנה מסוימות מכילות כמות קטנה של ניקל וקדמיום. אין לפרק סוללת המתנה, לטעון אותה מחדש, להשליך אותה לאש או למים או לקצר אותה. יש לסלק את הסוללה כנדרש על ידי התקנות והחוקים המקומיים. יש להשתמש רק בסוללה המופיעה ברשימת החלקים המתאימה. שימוש בסוללה לא מתאימה עלול לגרום להצתה או התפוצצות של הסוללה.



מארז הסוללה מכיל כמות קטנה של ניקל וקדמיום. אין לפרק את מארז הסוללה, להשליך אותו לאש או למים או לקצר אותו. יש לסלק את מארז הסוללה הסוללה כנדרש על ידי התקנות והחוקים המקומיים. יש להשתמש רק בסוללה המופיעה ברשימת החלקים המתאימה בזמן החלפת מארז הסוללה. שימוש בסוללה לא מתאימה עלול לגרום להצתה או התפוצצות של הסוללה.



סוללת הליתיום עלולה לגרום לשריפה, להתפוצצות או לכוויות קשות. אין לטעון אותה מחדש, לסלק את המחבר המקוטב שלה, לפרק אותה או לחמם אותה לטמפרטורה העולה על 100 מעלות צלזיוס. אין לשרוף את הסוללה ואין לחשוף את תוכן התא למים. יש לסלק את הסוללה כנדרש בתקנות ובחוקים המקומיים. יש להשתמש רק בסוללה המופיעה ברשימת החלקים המתאימים. שימוש בסוללה אחרת עלול לגרום לסיכנת שריפה או התפוצצות.



אם מסך הגביש נוזלי (LCD) נשבר והנוזל מתוך המסך בא במגע עם עיניכם או ידיכם, שטפו את האזורים הנוגעים מיד במים במשך 15 דקות לפחות. פנו לקבלת עזרה רפואית אם תסמינים הנובעים מהמגע עם הנוזל נמשכים לאחר הטיפוח.



כדי למנוע התחשמלות, אין להסיר את מכסה הפלסטיק המגן על חלקו התחתון של הכרטיס החפוף.



אף שהסוללות הראשיות הן בעלות מתח נמוך, סוללה מקוצרת או מוארכת עלולה להפיק זרם מספיק לגרימת כוויות או להצתת חומרים דליקים.



אלא אם כן מותרת 'החלפה חמה' של ה-FRU המוחלף, פעלו כדלהלן לפני הסרתו:  
כבו את המחשב, נתקו את כל כבלי החשמל מחשקעים, הוציאו את מארז הסוללות ונתקו את כל הכבלים  
המחוברים.



危険

FRUの交換後、ThinkPadの電源を入れる前に、ねじ、パネ、その他の小さな部品がすべて正しい位置にあり、またThinkPadの内部で緩んでいないことを確認してください。  
これを確認するには、ThinkPadを振って、カチャカチャと音がしないか確かめます。金属部品や金属破片はショートの原因になることがあります。



危険

予備バッテリーの中には少量のニッケルとカドミウムが含まれているものがあります。したがって、予備バッテリーの分解、再充電、火または水の中への投棄、またはショートさせることは決して行わないでください。バッテリーを廃棄する場合は地方自治体の条例に従ってください。適切なパーツ・リストにあるバッテリーだけを使用してください。誤ったバッテリーを使用すると、バッテリーが発火したり、爆発したりすることがあります。



危険

バッテリー・パックには少量のニッケルが含まれています。バッテリー・パックを分解したり、火または水の中に投げ込んだり、ショートさせないでください。バッテリー・パックの廃棄にあたっては、地方自治体の条例または規則に従ってください。バッテリー・パックを交換するときは、適切なパーツ・リストにあるバッテリーだけを使用してください。誤ったバッテリーを使用すると、バッテリーが発火したり、爆発したりすることがあります。



危険

リチウム・バッテリーは、火災、爆発、または重症のやけどを引き起こすことがあります。バックアップ・バッテリーの充電、その極性コネクターの取り外し、バッテリー本体の分解、100°C (212°F) 以上への加熱、焼却、電池の中身を水に浸すことはしないでください。バッテリーを廃棄する場合は地方自治体の条例に従ってください。適切なパーツ・リストにあるバッテリーだけを使用してください。誤ったバッテリーを使用すると、バッテリーが発火したり、爆発したりすることがあります。



危険

LCDが破損し、LCDの中の液体が目に入ったり、手に触れたりした場合は、液体が触れた部分を少なくとも15分間洗い流してください。洗い流した後に、液体によって何らかの症状が現れた場合は、医師の治療を受けてください。



危険

感電を防ぐため、インバーター・カードの下部を保護しているプラスチック・カバーを外さないでください。



危険

메인·배터리의電圧は低くても、ショートしたり、接地したバッテリーが、作業者にやけどを負わせたり、可燃物を燃やすだけの電流を発生させる場合があります。



危険

交換しようとしている FRU がホット・スワップに対応していない場合、それを取り外す前に、コンピューターの電源をオフにし、すべての電源コードをコンセントから抜き、バッテリー・パックを取り外して、相互接続しているケーブルをすべて切り離してください。



위험

FRU를 교체하고 나서 컴퓨터 전원을 켜기 전에 모든 나사, 스프링 및 기타 작은 부품들이 올바른 위치에 있는지, 컴퓨터 내부에 단단하게 연결되어 있는지 확인하십시오. 컴퓨터를 흔들어 달각거리는 소리가 나지 않는지 확인하십시오. 금속 부품 또는 금속 조각은 누전을 일으킬 수 있습니다.



위험

일부 보조 배터리에는 소량의 니켈 및 카드뮴이 포함되어 있습니다. 보조 배터리를 분해하거나, 다시 충전하거나, 불 또는 물에 던지거나, 단락시키지 마십시오. 배터리 팩을 폐기할 때에는 해당 지역의 법률 규정을 따르십시오. 배터리 팩을 교체할 때에는 올바른 배터리만 사용하십시오. 올바르지 않은 배터리를 사용하면 배터리가 발화되거나 폭발할 수 있습니다.



위험

배터리 팩에는 소량의 니켈이 포함되어 있습니다. 배터리 팩을 분해하거나, 불 또는 물에 던지거나, 단락시키지 마십시오. 배터리 팩을 폐기할 때에는 해당 지역의 법률 규정을 따르십시오. 배터리 팩을 교체할 때에는 올바른 배터리만 사용하십시오. 올바르지 않은 배터리를 사용하면 배터리가 발화되거나 폭발할 수 있습니다.



위험

리튬 배터리는 화재, 폭발 또는 심각한 화상을 일으킬 수 있습니다. 리튬 배터리를 다시 충전하거나, 극성 커넥터를 제거하거나, 분해하거나, 100C(212F) 이상으로 가열하거나, 소각하거나, 전지 내용물을 물에 노출시키지 마십시오. 배터리를 폐기할 때에는 해당 지역을 법률 규정을 따르십시오. 올바른 배터리만 사용하십시오. 올바르지 않은 배터리를 사용하면 배터리가 발화되거나 폭발할 수 있습니다.



위험

LCD가 파손되어 LCD 내부의 액체가 눈에 들어가거나 손에 묻으면 즉시 깨끗한 물로 15분 이상 닦아 내십시오. 씻은 후에 조금이라도 이상을 느끼면 즉시 병원에 가서 의사의 진찰을 받아야 합니다.



위험

전기적 위험을 방지하려면 인버터 카드의 아래 부분을 보호하는 플라스틱 덮개를 제거하지 마십시오.



기본 배터리의 전압은 낮지만, 단락되거나 접지된 배터리는 화상을 입히기에 충분한 전류와 가연성 물질을 발생시킬 수 있습니다.



FRU 교체 시 Hot Swap이 지원되지 않는 경우, FRU를 제거하기 전에 컴퓨터의 전원을 끄고, 전기 콘센트에서 전원 코드를 분리하고, 배터리를 제거한 후, 연결된 모든 케이블을 분리하십시오.



Antes de encender el sistema despues de sustituir una FRU, compruebe que todos los tornillos, muelles y demás piezas pequeñas se encuentran en su sitio y no se encuentran sueltas dentro del sistema. Compruébelo agitando el sistema y escuchando los posibles ruidos que provocarían. Las piezas metálicas pueden causar cortocircuitos eléctricos.



Algunas baterías de reserva contienen una pequeña cantidad de níquel y cadmio. No las desmonte, ni recargue, ni las eche al fuego o al agua ni las cortocircuite. Deséchelas tal como dispone la normativa local. Utilice sólo baterías que se encuentren en la lista de piezas. La utilización de una batería no apropiada puede provocar la ignición o explosión de la misma.



Las baterías contienen pequeñas cantidades de níquel. No las desmonte, ni recargue, ni las eche al fuego o al agua ni las cortocircuite. Deséchelas tal como dispone la normativa local. Utilice sólo baterías que se encuentren en la lista de piezas al sustituir la batería. La utilización de una batería no apropiada puede provocar la ignición o explosión de la misma.



La batería de repuesto es una batería de litio y puede provocar incendios, explosiones o quemaduras graves. No la recargue, ni quite el conector polarizado, ni la desmonte, ni caliente por encima de los 100°C (212°F), ni la incinere ni exponga el contenido de sus celdas al agua. Deséchela tal como dispone la normativa local.



Si la LCD se rompe y el fluido de su interior entra en contacto con sus ojos o sus manos, lave inmediatamente las áreas afectadas con agua durante 15 minutos como mínimo. Obtenga atención médica si se presenta algún síntoma del fluido después de lavarse.



#### PELIGRO

Para evitar descargas, no quite la cubierta de plástico que rodea la parte baja de la tarjeta invertida.



#### PELIGRO

Aunque las baterías principales tienen un voltaje bajo, una batería cortocircuitada o con contacto a tierra puede producir la corriente suficiente como para quemar material combustible o provocar quemaduras en el personal.



#### PELIGRO

Salvo que se permita el intercambio en caliente para la unidad sustituible localmente, realice lo siguiente antes de extraerla: apague el sistema, desconecte todos los cables de alimentación de las tomas de alimentación eléctrica, extraiga la batería y desconecte los cables de interconexión.



#### 危險

完成 FRU 更換之後，在開啟電腦的電源之前，請確定所有螺絲、彈簧及其他小零件都已歸位，沒有遺留在電腦內部。  
若要確認這一點，請搖晃電腦，聽聽看是否有卡嗒的聲音。  
金屬零件或機械的火花會造成電線短路。



#### 危險

部分備用電池含有微量的鎳和鎘。請勿拆開備用電池、再充電、丟入火或水中，或使其形成短路。請按照當地法令或規定來棄置電池。  
僅限使用零件清單中的電池。使用不適當的電池會導致電池起火或爆炸。



#### 危險

電池套件含有微量的鎳。請勿拆開電池套件、丟入火或水中，或使其形成短路。請按照當地法令或規定來棄置電池套件。  
更換電池套件時，僅限使用零件清單中的電池。使用不適當的電池會導致電池起火或爆炸。



#### 危險

鋰電池會導致起火、爆炸或嚴重燒傷。請勿再充電、拔除其電極接頭、拆開、加熱超過 100°C (212°F)、焚燒，或讓電池組成物浸到水。請按照當地法令或規定來棄置電池。  
僅限使用零件清單中的電池。使用不適當的電池會導致電池起火或爆炸。



危險

如果 LCD 破裂導致 LCD 流出的液體沾到您的眼睛或手，請立即以清水沖洗沾染部位至少 15 分鐘。如果在清洗後出現該液體所造成的任何症狀，請就醫治療。



危險

為避免電擊，請勿拆下轉換卡下面的塑膠護蓋。



危險

雖然主電池的電壓很低，但短路或接地電池所產生的電流，仍足以使人燒傷或使可燃物質起火。



危險

除非 FRU 允許以熱抽換來替換，否則請依下列方式將其移除：將電腦關機，拔除插座上所有電源線，移除電池包，並拔開任何交互連接的線材。





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## Chapter 2. Important service information

This chapter presents the following important service information that applies to all machine types supported by this manual:

- “Strategy for replacing FRUs” on page 19
  - “Important notice for replacing a system board” on page 19
- “Strategy for replacing FRUs for CTO, CMV, and GAV” on page 20
  - “Product definition” on page 20
  - “FRU identification for CTO, CMV, and GAV products” on page 20

### Important:

- Advise customers to access <http://www.lenovo.com/support> to view the software fixes and driver downloads for the tablet. To install them, advise customers to call the Lenovo® Customer Support Center. Telephone numbers for Lenovo Support Center are available at:  
<http://www.lenovo.com/support/phone>
- System disassembly and reassembly videos that show the FRU removal and replacement procedures for the Lenovo authorized service technicians are available at:  
<http://www.lenovoservicetraining.com/ion/>

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## Strategy for replacing FRUs

### Before replacing parts:

Use the following strategy to prevent unnecessary expense for replacing and servicing FRUs:

- **If you are instructed to replace a FRU but the replacement does not correct the problem, reinstall the original FRU before you continue.**
- Some tablets have both a processor board and a system board. If you are instructed to replace either the processor board or the system board, and replacing one of them does not correct the problem, reinstall that board, and then replace the other one.
- If an adapter or a device consists of more than one FRU, any of the FRUs may be the cause of the error. Before replacing the adapter or device, remove the FRUs, one by one, to see if the symptoms change. Replace only the FRU that changed the symptoms.

**Attention:** The setup configuration on the tablet you are servicing may have been customized. Running Automatic Configuration may alter the settings. Note the current configuration settings (using the View Configuration option); then, when service has been completed, verify that those settings remain in effect.

## Important notice for replacing a system board

**Attention:** When handling a system board:

- Do not drop a system board or apply any excessive force to it.
- Avoid rough handling of any kind.
- Avoid bending a system board and hard pushing to prevent cracking at each BGA (Ball Grid Array) chipset.

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# Strategy for replacing FRUs for CTO, CMV, and GAV

## Product definition

### Dynamic Configure To Order (CTO)

This provides the ability for a customer to configure a Lenovo solution from an eSite, and have this configuration sent to fulfillment, where it is built and shipped directly to the customer. The machine label, Product Entitlement Warehouse (PEW), eSupport, and the HMM will load these products as the 4-digit MT and 3-digit model, where model = "CTO" (Example: 1829-CTO).

### Custom Model Variant (CMV)

This is a unique configuration that has been negotiated between Lenovo and the customer. A unique 4-digit MT and 3-digit model is provided to the customer to place orders (Example: 1829-W15). A CMV is a special bid offering. Therefore, it is NOT generally announced.

- The MTM portion of the machine label is the 4-digit MT and 3-digit model, where model = "CTO" (Example: 1829-CTO). The PRODUCT ID portion of the machine label is the 4-digit MT and 3-digit CMV model (Example: 1829-W15).
- The PEW record is the 4-digit MT and 3-digit model, where model = "CTO" (Example: 1829-CTO).
- eSupport will show both the CTO and CMV machine type models (Example: 1829-CTO and 1829-W15 will be found on the eSupport site.)
- The HMM will have the 4-digit MT and 3-digit CTO model only (Example: 1829-CTO). Again, CMVs are custom models and are not found in the HMM.

### General Announce Variant (GAV)

This is a standard model (fixed configuration). GAVs are announced and offered to all customers. The MTM portion of the machine label is a 4-digit MT and 3-digit model, where model = a "fixed part number", not "CTO" (Example: 1829-F1U). Also, PEW, eSupport, and the HMM will list these products under the same fixed model number.

## FRU identification for CTO, CMV, and GAV products

There are three information resources to identify which FRUs are used to support CTO, CMV, and GAV products. These sources are PEW, eSupport, and the HMM.

### Using PEW

- **PEW** is the primary source for identifying FRU part numbers and FRU descriptions for the key commodities for CTO, CMV and GAV products at a MT - serial number level. An example of key commodities are system boards and Liquid Crystal Displays (LCDs).
- Remember, all CTO and CMV products are loaded in PEW under the 4-digit MT and 3-digit model, where model = "CTO" (Example: 1829-CTO). GAVs are loaded in PEW under the 4-digit MT and 3-digit model, where model = a "fixed part number", not "CTO" (Example: 1829-F1U).
- PEW can be accessed at the following Web site:  
<http://www.lenovo.com/support/site.wss/document.do?Indocid=LOOK-WARNTY>  
Select Warranty lookup. Input the machine type and the serial number and the list of key commodities will be returned in the PEW record under COMPONENT INFORMATION.

### Using eSupport

#### For key commodities (examples - system board and LCD)

- eSupport can be used to view the list of key commodities built in a particular machine serial (this is the same record found in PEW).
- eSupport can be accessed at the following Web site:  
<http://support.lenovo.com>
- To view the key commodities, do the following:
  1. Click **Products & Service Warranty**.
  2. Click **Check Warranty Status**.
  3. On the Warranty Status Lookup page, click **Parts Lookup**.
  4. Type your machine type and serial number, and then click **Submit**. The key commodities will be displayed.

#### **For the remaining FRUs (the complete list of FRUs at the MT model level)**

- eSupport can be used to view the complete list of FRUs for a machine type and model.
- To view the complete list of FRUs, do the following:
  1. Click **Product & Parts Detail** and then follow the instructions on the screen to reach the Product and Parts Details page.
  2. Click the **Parts Detail** tab to view the list of service parts.

#### **Using the HMM**

##### **For key commodities (examples - system board and LCD)**

Use the HMM as a backup to PEW and eSupport to view the complete list of FRUs at the MT model level.



---

## Chapter 3. General checkout

This chapter presents the following information:

- “What to do first” on page 23
- “Power system checkout” on page 24

**Diagnostics:** Instructions for accessing and using system resident service diagnostics can be found at the following Web site:  
<http://support.lenovo.com>

**Note:** To access and use the diagnostics, you must have a valid login ID and password.

### Important:

- **Only certified trained personnel should service the computer.**
- **Before replacing any FRU, read the entire page on removing and replacing FRUs.**
- **When you replace FRUs, use new nylon-coated screws.**
- **Be extremely careful during such write operations as copying, saving, or formatting.**
- **Replace a FRU only with another FRU of the correct model.**

When you replace a FRU, make sure that the model of the machine and the FRU part number are correct by referring to the FRU parts list.

- **A FRU should not be replaced because of a single, unreproducible failure.**

Single failures can occur for a variety of reasons that have nothing to do with a hardware defect, such as cosmic radiation, electrostatic discharge, or software errors. Consider replacing a FRU only when a problem recurs. If you suspect that a FRU is defective, clear the error log and run the test again. If the error does not recur, do not replace the FRU.

- **Be careful not to replace a non-defective FRU.**

---

## What to do first

When you do return a FRU, you must include the following information in the parts exchange form or parts return form that you attach to it:

1. Name and phone number of service technician
2. Date of service
3. Date on which the machine failed
4. Date of purchase
5. Failing FRU name and part number
6. Machine type, model number, and serial number
7. Customer's name and address

**Note:** During the warranty period, the customer may be responsible for repair costs if the tablet damage was caused by misuse, accident, modification, unsuitable physical or operating environment, or improper maintenance by the customer. Following is a list of some common items that are not covered under warranty and some symptoms that might indicate that the system was subjected to stress beyond normal use.

Before checking problems with the tablet, determine whether the damage is covered under the warranty by referring to the following list:

### The following are not covered under warranty:

- LCD panel cracked from the application of excessive force or from being dropped
- Scratched (cosmetic) parts

- Distortion, deformation, or discoloration of the cosmetic parts
- Plastic parts, latches, pins, or connectors that have been cracked or broken by excessive force
- Damage caused by liquid spilled into the system
- Damage caused by the improper insertion of a PC Card or the installation of an incompatible card
- Fuses blown by attachment of a nonsupported device
- Forgotten tablet password (making the tablet unusable)
- Sticky keys caused by spilling a liquid
- Damage caused due to use of an incorrect ac charger

**The following symptom might indicate damage caused by nonwarranted activities:**

- Missing parts might be a symptom of unauthorized service or modification.

---

## Power system checkout

To verify a symptom, do the following:

1. Turn off the tablet.
2. Remove the internal battery.
3. Attach the tablet to a ThinkPad Tablet Dock (hereafter referred to as the dock) and then connect the dock to an electrical outlet using the 65 W ac power adapter shipped with the dock.
4. Check whether power is supplied when you turn on the tablet.
5. Turn off the tablet.
6. Disconnect the ac power adapter and detach the dock. Then install the internal battery.
7. Check whether the internal battery supplies power when you turn on the tablet.

If you suspect a power problem, see the appropriate one of the following power supply checkouts:

- “Checking the internal battery” on page 24
- “Checking the internal battery condition” on page 24
- “Checking the ThinkPad Tablet AC Charger” on page 25
- “Checking the internal battery status” on page 25

## Checking the internal battery

When you use the internal battery but the tablet fails, see the instructions in this topic to check the internal battery.

To check the internal battery, do the following:

1. Turn off the tablet.
2. Replace the internal battery with another battery.
3. Check that power is supplied when you turn on the tablet.

If you can turn on the tablet, replace the internal battery.

## Checking the internal battery condition

After you have used the tablet for a long time, check the internal battery condition and determine if the battery shall be replaced with a new one.

To check the internal battery condition, do the following:

1. Open the Android Settings screen.

To open the Android Settings screen, do either of the following:

- From the main Home screen, touch the Android **Settings** icon on Lenovo Launch Zone. The Android Settings screen is displayed.

- Touch the application icon from the action bar and then touch **Settings**. The Android Settings screen is displayed.
2. Touch **About tablet**.
  3. Touch **Status** → **Battery Condition**. One of the following conditions might be displayed:
    - **Good**
    - **Fair**
    - **Poor**

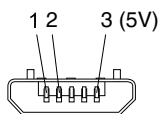
If the condition is **Fair** or **Poor**, replace the internal battery.

## Checking the ThinkPad Tablet AC Charger

When you use the ThinkPad Tablet AC Charger to charge the tablet but no power is charged, see the instructions in this topic to check the ThinkPad Tablet AC Charger.

To check the ThinkPad Tablet AC Charger, do the following:

1. Disconnect the micro-USB cable from the tablet.
2. Measure the output voltage across the connector marked B of the micro-USB cable. Refer to the following figure:



Pin	Voltage (V dc)
1	Ground
2	0
3	+5

**Note:** The output voltage across pin 3 of the micro-B connector might be different from the one you are servicing.

3. If the voltage is not correct, replace the micro-USB cable.
4. If the voltage is acceptable, replace the system board.

## Checking the internal battery status

To check the battery status of the tablet, do either of the following:

- **Approximate information about the battery status**

Get the approximate status of the battery at any time by checking the battery status icon on the system bar in the lower-right corner of the screen. The shorter the blue bar is, the less the battery power remains.

- **Accurate information about the battery status**

To get the accurate information about the battery status of the tablet, do the following:

1. Open the Android Settings screen.

To open the Android Settings screen, do either of the following:

- From the main Home screen, touch the Android **Settings** icon on Lenovo Launch Zone. The Android Settings screen is displayed.
- Touch the application icon from the action bar and then touch **Settings**. The Android Settings screen is displayed.

2. Touch **About tablet** on the Android Settings screen.

3. Touch **Status** to view the accurate percentage of the remaining battery power. You also can touch **Battery use** to check what applications are consuming battery power.





---

## Chapter 4. Related service information

This chapter presents the following information:

- “Resetting a tablet preload to the factory condition” on page 27
- “Locking the screen” on page 27
- “Power management” on page 29

---

### Resetting a tablet preload to the factory condition

**Note:** The following data will be erased when you reset a tablet preload to the factory condition.

- Google Account
- System and application data and settings
- Downloaded applications
- Music
- Photos
- Other user data

To reset a tablet preload to the factory condition, do the following:

1. Open the Android Settings screen.

To open the Android Settings screen, do either of the following:

- From the main Home screen, touch the Android **Settings** icon on Lenovo Launch Zone. The Android Settings screen is displayed.
- Touch the application icon from the action bar and then touch **Settings**. The Android Settings screen is displayed.

2. Touch **Privacy**.
3. Touch **Factory data reset**.
4. Touch the **Reset tablet** icon and the tablet will be reset to the factory condition.

---

### Locking the screen

To protect your tablet data against unauthorized access, lock the screen and set an unlock mode for unlocking the screen. The screen unlock mode can be a personal or corporate password, a PIN, or a pattern. After a screen unlock mode is set and the screen is locked, the next time you turn on your tablet or wake up the screen, you must type the password or the PIN, or draw the unlock pattern to unlock it.

After you lock the tablet, nothing happens if you touch the screen, but you still can listen to the music and use the volume control buttons.

**Notes:** To listen to the music when the screen is locked, do the following:

1. Open the Android Settings screen.

To open the Android Settings screen, do either of the following:

- From the main Home screen, touch the Android **Settings** icon on Lenovo Launch Zone. The Android Settings screen is displayed.
- Touch the application icon from the action bar and then touch **Settings**. The Android Settings screen is displayed.

2. Touch **Privacy**.

3. Touch the **Screen lock sounds** icon.

## Enabling the screen unlock function

To enable the screen unlock function and set up a password, PIN, or pattern to unlock the screen, do the following:

1. Open the Android Settings screen.

To open the Android Settings screen, do either of the following:

- From the main Home screen, touch the Android **Settings** icon on Lenovo Launch Zone. The Android Settings screen is displayed.
  - Touch the application icon from the action bar and then touch **Settings**. The Android Settings screen is displayed.
2. Touch **Location & Security** → **Configure lock screen** to open a list of options.
  3. Touch one of the following options to set up the screen unlock mode:
    - **Not secured**: No password, PIN, or pattern is required to unlock the screen.
    - **Pattern**: A pattern is a unique way you set to unlock the screen. The first time you try to set a pattern, a short tutorial about creating an unlock pattern is displayed.
    - **PIN**: Type a series of numbers.
    - **Password**: Type a series of characters, numbers, or a combination of both.
    - **Corporate Logon**: Select this option to use the same user name and password when you log on to your company's Active Directory domain to unlock your tablet screen.
  4. Touch **OK** to save your setting. The next time you turn on the tablet or wake up the screen, type the password or the PIN, or draw the unlock pattern to unlock the screen.

### Notes:

- For the **Corporate Logon** mode, after 10 incorrect attempts to unlock your tablet, your tablet will reset itself to the factory default state. This process erases all user-created data from the tablet, including Google or other e-mail account settings, system and application data and settings, and downloaded applications.
- For other unlock modes, if you forget the password, PIN, or pattern, contact Lenovo support for system reset. After 10 times of incorrect password, PIN, or pattern input, the tablet will reset itself to the factory default settings. The reset process will erase all data from the tablet, including Google or other e-mail account settings, system and application data and settings, and downloaded applications. Therefore, take a note of your password, PIN, or pattern in case you forget it.

## Changing the password, PIN, or pattern

To change a password, PIN, or pattern, do the following:

1. Open the Android Settings screen.

To open the Android Settings screen, do either of the following:

- From the main Home screen, touch the Android **Settings** icon on Lenovo Launch Zone. The Android Settings screen is displayed.
  - Touch the application icon from the action bar and then touch **Settings**. The Android Settings screen is displayed.
2. Touch **Location & Security** → **Configure lock screen**.
  3. Touch the screen unlock mode you have set and type the password or PIN, or draw the pattern. Then touch **OK**.

4. Type your new password or PIN, or draw a new pattern. Confirm it by typing or drawing it for a second time.
5. Touch **OK** to save your change.

## Disabling the screen lock function

To disable the screen lock function, do the following:

1. Open the Android Settings screen.

To open the Android Settings screen, do either of the following:

- From the main Home screen, touch the Android **Settings** icon on Lenovo Launch Zone. The Android Settings screen is displayed.
  - Touch the application icon from the action bar and then touch **Settings**. The Android Settings screen is displayed.
2. Touch **Location & Security** → **Configure lock screen**.
  3. Touch **Not secured**. The screen unlock function is disabled.

---

## Power management

To reduce power consumption, you can set the tablet into screen blank mode or disconnect the tablet from the wireless network.

### Screen blank mode

To turn off the screen when the tablet is not in use, do either of the following:

- Press the power button once.
  - Touch the screen lock widget to turn off the screen.
- For more information about how to lock the screen, refer to “Locking the screen” on page 27.
- Configure the **Timeout** policy to turn off the screen automatically when the tablet is not in use.

To configure the **Timeout** policy, do the following:

1. Open the Android Settings screen.

To open the Android Settings screen, do either of the following:

- From the main Home screen, touch the Android **Settings** icon on Lenovo Launch Zone. The Android Settings screen is displayed.
  - Touch the application icon from the action bar and then touch **Settings**. The Android Settings screen is displayed.
2. Touch **Screen**.
  3. Touch **Timeout** and then select when the screen will be turned off automatically if the tablet is not in use.

**Note:** The tablet screen turns off automatically after 30 minutes when the tablet is not in use.

To resume the tablet from screen blank mode, do either of the following:

- Press any key button.
- Touch the **Unlock** icon on the main Home screen to unlock the screen.

**Note:** If you have set up a screen unlock password, PIN, or pattern, type the password or PIN, or draw the pattern to unlock the screen. For more information about how to change or remove the password, PIN, or pattern, refer to “Disabling the screen lock function” on page 29.

## Wireless network disconnect policy

To get a longer battery life, manage your wireless connections more reasonably by configuring the wireless network disconnect policy.

To configure the wireless network disconnect policy, do the following:

1. Open the Android Settings screen.

















To open the Android Settings screen, do either of the following:

- From the main Home screen, touch the Android **Settings** icon on Lenovo Launch Zone. The Android Settings screen is displayed.
  - Touch the application icon from the action bar and then touch **Settings**. The Android Settings screen is displayed.
2. Touch **Wireless & network → Wi-Fi settings**.
  3. Touch the **Menu** icon and then touch **Advanced**.
  4. Touch **Wireless Enhanced Settings**. The following options are displayed. Touch to enable the function or to further configure the setting.
    - **Turn off Wi-Fi when display is off**
    - **Never turn off Wi-Fi when connect to the specified [SSID]**
    - **Turn off Wi-Fi on schedule**
    - **Turn off WAN when connect to Wi-Fi**
    - **Connect to the WAN**

## Chapter 5. Hot key combinations on the ThinkPad Tablet Keyboard Folio Case

The following table lists the functions of the hot key combinations on the ThinkPad Tablet Keyboard Folio Case.

Table 1. Hot key combinations on the ThinkPad Tablet Keyboard Folio Case

Hot key	Description
	Go back to the previous screen
	Speaker mute
	Speaker volume down
	Speaker volume up
	Microphone mute
	Open the main Home screen
	View notifications from Lenovo
	Open the Android Settings screen
	Lock the screen
	Zoom in
	Zoom out
	Go to the previous track or scene
	Play or pause
	Go to the next track or scene
	Open the menu for the current application
	Launch Google Search



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## Chapter 6. FRU replacement notices

### External CRU statement to customers:

Some problems with your product can be resolved with a replacement part you can install yourself, called a “Customer Replaceable Unit” or “CRU.” Some CRUs are designated as Self-service CRUs and others are designated as Optional-service CRUs. *Installation of Self-service CRUs is your responsibility; you may request that Lenovo installs an Optional-service CRU according to the warranty service for your product.* Where you are installing the CRU, Lenovo will ship the CRU to you. CRU information and replacement instructions are shipped with your product and are available from Lenovo at any time upon request. You may find a list of CRUs in the publications that ship with your product or at <http://www.lenovo.com/CRUs>. You may be required to return the defective part that is replaced by the CRU. When return is required: (1) return instructions, a prepaid shipping label, and a container will be included with the replacement CRU; and (2) you may be charged for the replacement CRU if Lenovo does not receive the defective part within thirty (30) days of your receipt of the replacement CRU. See your Lenovo Limited Warranty documentation for full details.

This chapter presents notices related to removing and replacing parts. Read this chapter carefully before replacing any FRU.

---

## Screw notices

Loose screws can cause a reliability problem. In a ThinkPad Tablet, this problem is addressed with special nylon-coated screws that have the following characteristics:

- They maintain tight connections.
- They do not easily come loose, even with shock or vibration.
- They are harder to tighten.
- Each one should be used only once.

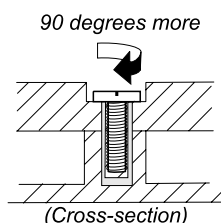
Do the following when you service the tablet:

- Keep the screw kit in your tool bag. For the part number (P/N) of the screw kit, see “Miscellaneous parts” on page 56.
- Always use new screws.
- Use a torque screwdriver if you have one.

Tighten screws as follows:

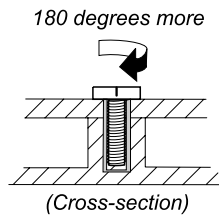
- **Plastic to plastic**

Turn an additional angle of 90 degrees after the screw head touches the surface of the plastic part.



- **Logic card to plastic**

Turn an additional angle of 180 degrees after the screw head touches the surface of the logic card.



**Notes:**

- Make sure that you use the correct screw. If you have a torque screwdriver, tighten all screws firmly to the torque shown in the table for each step in Chapter 7 “Removing and replacing a FRU” on page 35. Never use a screw that you removed. Use a new one. Make sure that all of the screws are tightened firmly.
- Ensure torque screwdrivers are calibrated correctly following country specifications.

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## Retaining serial numbers, MTM, UUID, and Asset ID

Instructions for retaining serial numbers, MTM, UUID, or asset ID can be found at the following Web site:  
<http://support.lenovo.com>

**Note:** To access the instructions, use, and download the required Android Package (APK) file, you must have a valid login ID and password.



---

## Chapter 7. Removing and replacing a FRU

### External CRU statement to customers:

Some problems with your product can be resolved with a replacement part you can install yourself, called a “Customer Replaceable Unit” or “CRU.” Some CRUs are designated as Self-service CRUs and others are designated as Optional-service CRUs. *Installation of Self-service CRUs is your responsibility; you may request that Lenovo installs an Optional-service CRU according to the warranty service for your product.* Where you are installing the CRU, Lenovo will ship the CRU to you. CRU information and replacement instructions are shipped with your product and are available from Lenovo at any time upon request. You may find a list of CRUs in the publications that ship with your product or at <http://www.lenovo.com/CRUs>. You may be required to return the defective part that is replaced by the CRU. When return is required: (1) return instructions, a prepaid shipping label, and a container will be included with the replacement CRU; and (2) you may be charged for the replacement CRU if Lenovo does not receive the defective part within thirty (30) days of your receipt of the replacement CRU. See your Lenovo Limited Warranty documentation for full details.

This chapter presents directions and drawings for use in removing and replacing a FRU. Be sure to observe the following general rules:

1. Do not try to service any tablet unless you have been trained and certified. An untrained person runs the risk of damaging parts.
2. Before replacing any FRU, review Chapter 6 “FRU replacement notices” on page 33.
3. Begin by removing any FRUs that have to be removed before replacing the failing FRU. Any such FRUs are listed at the top of each FRU replacement page. Remove them in the order in which they are listed.
4. Follow the correct sequence in the steps for removing a FRU, as given in the drawings by the numbers in square callouts.
5. When turning a screw to replace a FRU, turn it in the direction as given by the arrow in the drawing.
6. When removing a FRU, move it in the direction as given by the arrow in the drawing.
7. To put the new FRU in place, reverse the removal procedure and follow any notes that pertain to replacement. For information about connecting and arranging internal cables, see Chapter 8 “Locating the controls and hardware components” on page 49.
8. When replacing a FRU, use the correct screw(s) as shown in the procedures.



<b>Before removing any FRU, turn off the tablet, disconnect all power supplies, remove the internal battery, and then disconnect any interconnecting cable.</b>
---

**Attention:** After replacing a FRU, do not turn on the tablet until you have made sure that all screws, springs, and other small parts are in place and none are loose inside the tablet. Verify this by shaking the tablet gently and listening for rattling sounds. Metallic parts or metal flakes can cause electrical short circuits.

**Attention:** The system board is sensitive to, and can be damaged by, electrostatic discharge. Before touching it, establish personal grounding by touching a ground point with one hand or by using an electrostatic discharge (ESD) strap (P/N 6405959).

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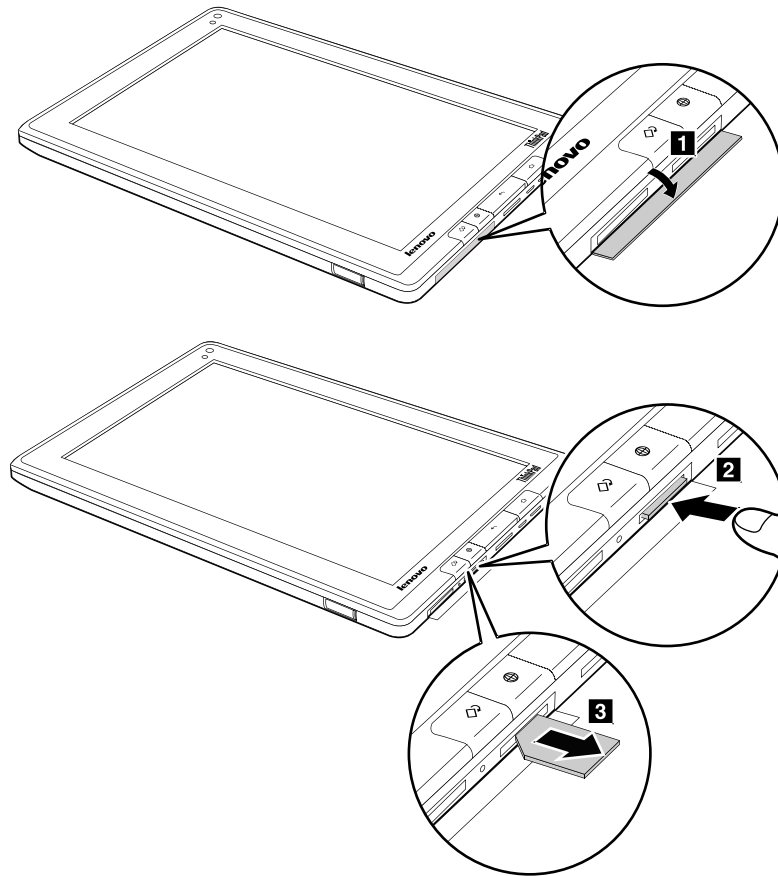
### Before servicing the ThinkPad Tablet

Some models of the ThinkPad Tablet you are servicing might have the SIM card that the customer has installed.

If the tablet you are servicing has the SIM card, remove it before you start the servicing.

**Note:** Before removing the SIM card, disconnect the power supply of the internal battery by pressing the emergency reset button inside the emergency reset hole using a straightened paper clip.

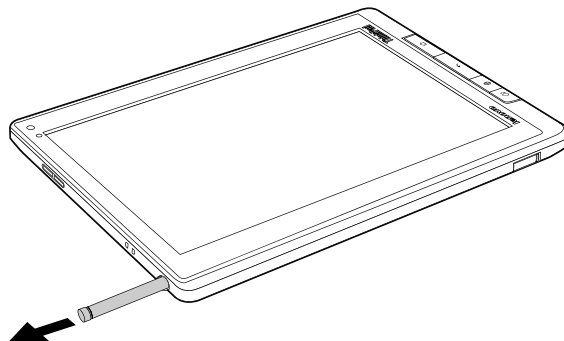
After you finish the servicing, make sure that you insert the card back into the slot firmly.



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## 1010 ThinkPad Tablet Pen

Removal steps of ThinkPad Tablet Pen



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## 1020 Front-facing camera, rear-facing camera assembly, and internal battery

For access, remove this FRU:

- “1010 ThinkPad Tablet Pen” on page 36

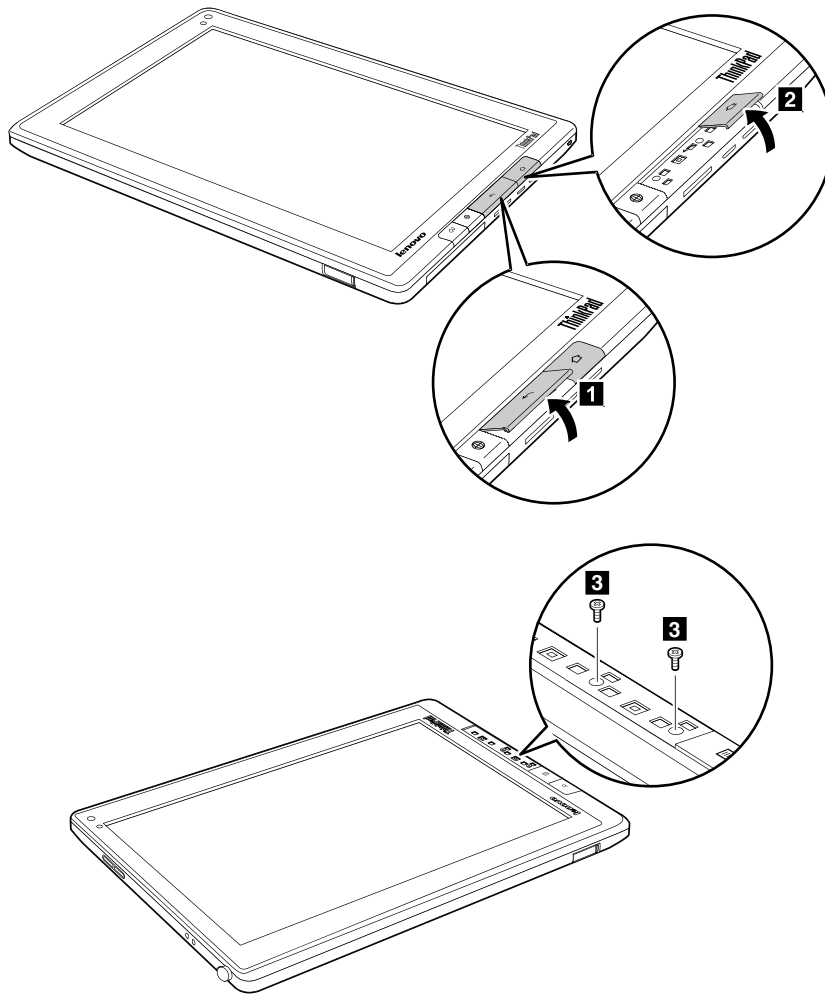
### Removal steps of front-facing camera, rear-facing camera assembly, and internal battery



**Use only the battery specified in the parts list for the tablet. Any other battery could ignite or explode.**

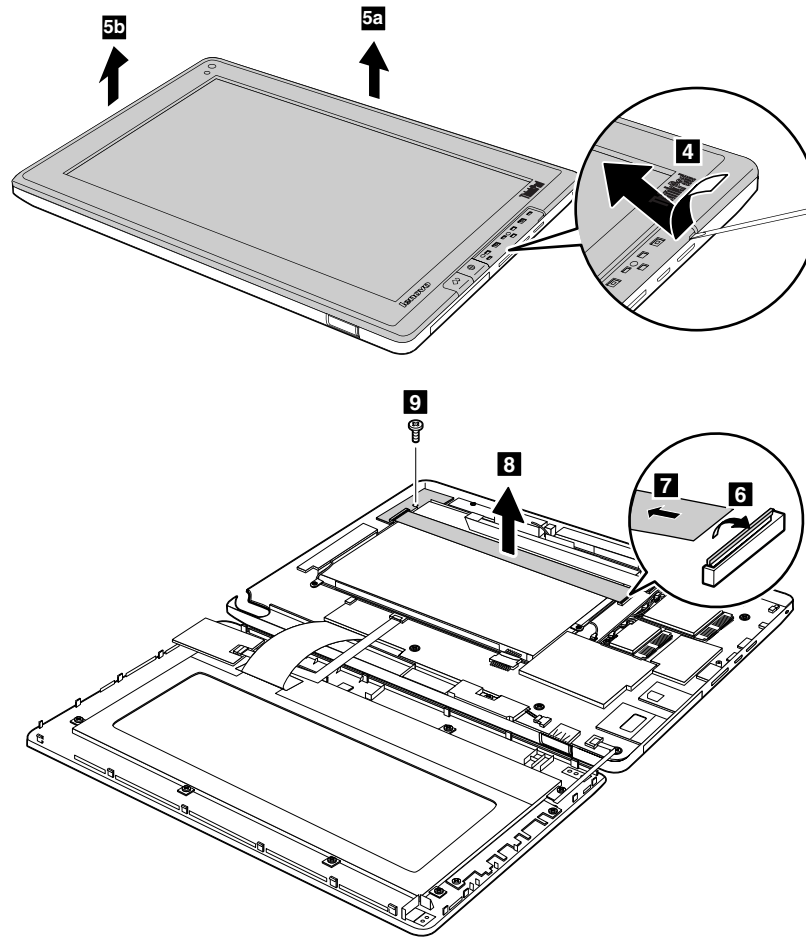
**Note:** Before removing the front-facing camera, rear-facing camera assembly, and internal battery, disconnect the power supply of the internal battery by pressing the emergency reset button inside the emergency reset hole using a straightened paper clip.

Detach the Back and Home buttons on the LCD module assembly with your thumbs as shown in the following illustration.



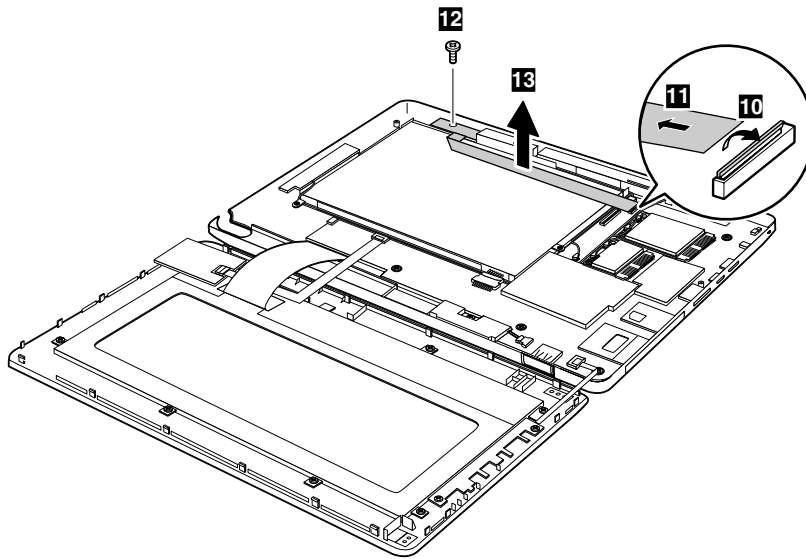
Step	Screw (quantity)	Color	Torque
<b>3</b>	M2 × 8 mm, flat-head, nylon-coated (2)	Silver	0.181 Nm (1.85 kgfcm)

Insert a nipper into the gap between the LCD module assembly and the base cover and then detach the hooks between the LCD module assembly and the base cover.



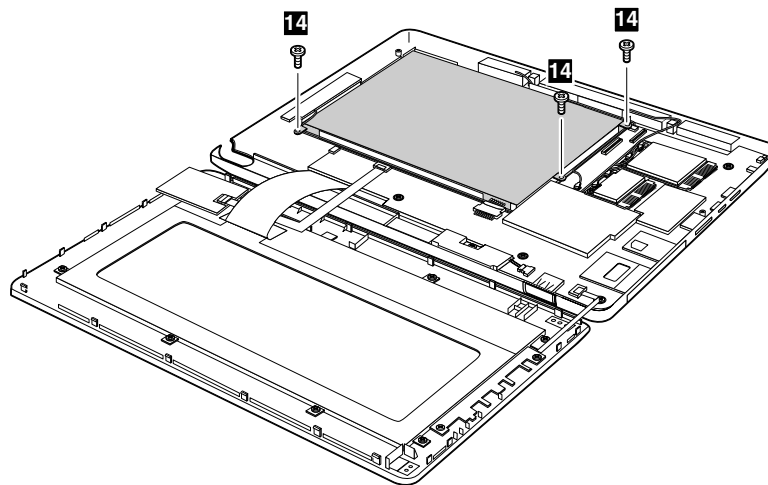
**When installing:** Make sure that the connector is attached firmly to the system board.

Step	Screw (quantity)	Color	Torque
9	M2 × 4 mm, flat-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgfcm)

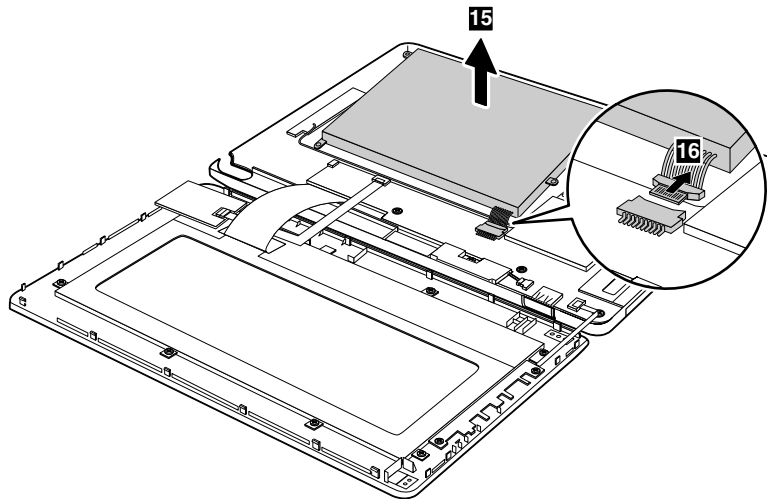


**When installing:** Make sure that the connector is attached firmly to the system board.

Step	Screw (quantity)	Color	Torque
<b>12</b>	M2 × 4 mm, flat-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgfcm)



Step	Screw (quantity)	Color	Torque
<b>14</b>	M2 × 4 mm, flat-head, nylon-coated (3)	Silver	0.181 Nm (1.85 kgfcm)



**When installing:** Make sure that the battery connector **16** is attached firmly to the system board.

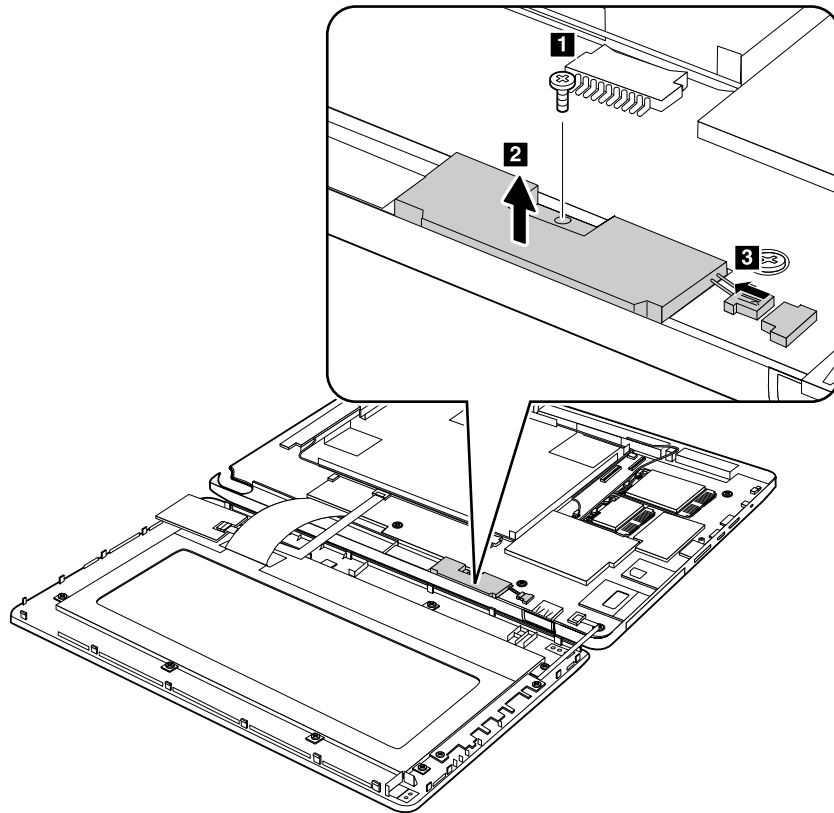
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## 1030 Speaker assembly

For access, remove these FRUs in order:

- “1010 ThinkPad Tablet Pen” on page 36
- “1020 Front-facing camera, rear-facing camera assembly, and internal battery” on page 36

## Removal steps of speaker assembly



Step	Screw (quantity)	Color	Torque
<b>1</b>	M2 × 3 mm, flat-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgfcm)

**When installing:** Make sure that the connector **3** is attached firmly to the system board.

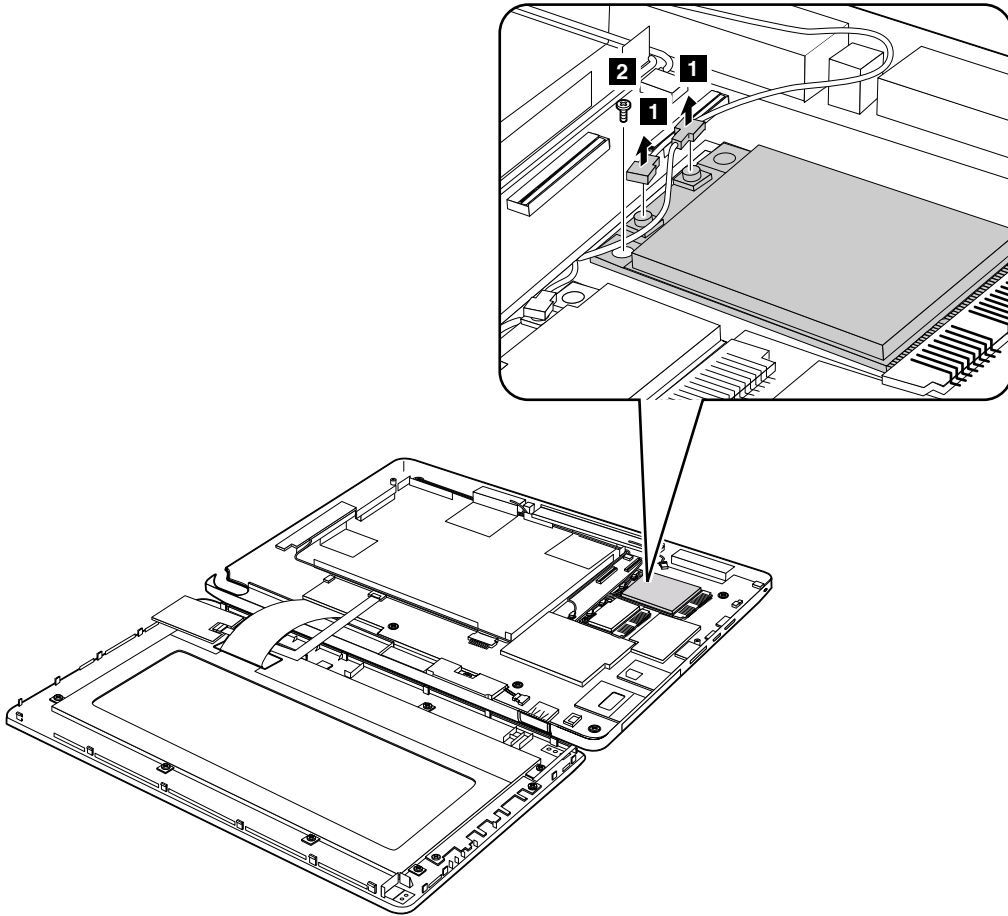
## 1040 PCI Express Mini Card for wireless WAN

For access, remove these FRUs in order:

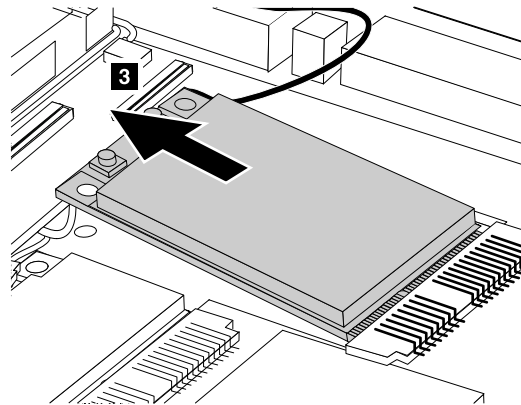
- “1010 ThinkPad Tablet Pen” on page 36
- “1020 Front-facing camera, rear-facing camera assembly, and internal battery” on page 36

### Removal steps of PCI Express Mini Card for wireless WAN

In step **1**, unplug the jacks by using the removal tool antenna RF connector (P/N: 08K7159) or pick the connectors with your fingers and gently unplug them in the direction of the arrows.



Step	Screw (quantity)	Color	Torque
<b>2</b>	M2 × 3 mm, flat-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgfcm)



**When installing:** When you install the card, plug the red cable into the jack labeled **MAIN** on the card, and the blue cable into the jack labeled **AUX**.

## 1050 PCI Express Mini Card for wireless LAN and Bluetooth combo card

For access, remove these FRUs in order:

- “1010 ThinkPad Tablet Pen” on page 36

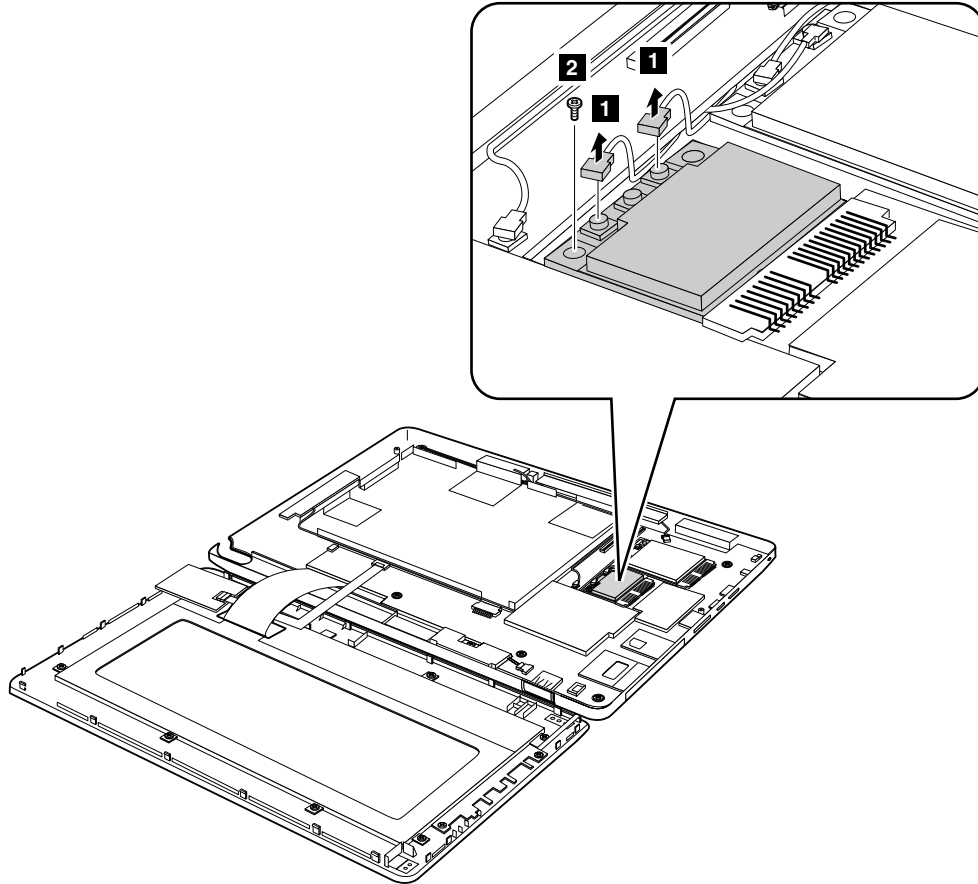


- “1020 Front-facing camera, rear-facing camera assembly, and internal battery” on page 36

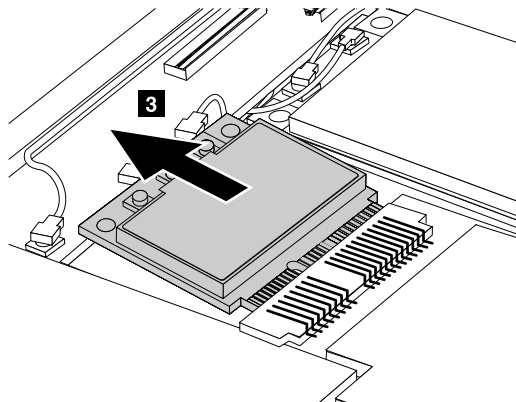
**Removal steps of PCI Express Mini Card for wireless LAN and Bluetooth combo card**

In step **1**, unplug the jacks by using the removal tool antenna RF connector (P/N: 08K7159) or pick the connectors with your fingers and gently unplug them in the direction of the arrows.

**Note:** Some models might have a third white antenna cable.



Step	Screw (quantity)	Color	Torque
<b>2</b>	M2 × 3 mm, flat-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgfcm)



**When installing:** Plug the gray cable into the jack marked **MAIN** or **M**, and the black cable into the jack marked **AUX** or **A** on the card.

**Note:** In models with a wireless LAN card that has three antenna connectors, plug the gray cable (MAIN) into the jack marked **TR1**, the white cable (third) into the jack marked **RO** or **TR3**, and the black cable (AUX) into the jack marked **TR2** on the card.

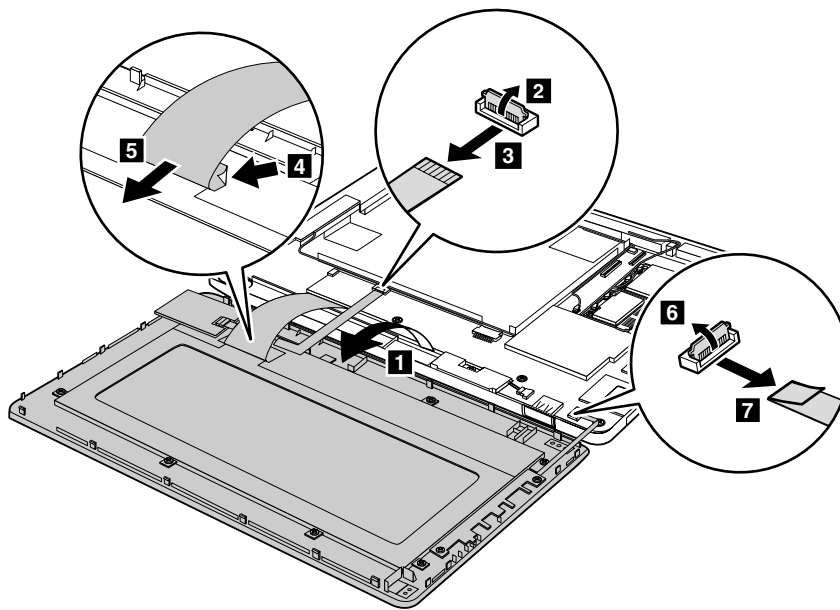
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## 1060 LCD module assembly

For access, remove these FRUs in order:

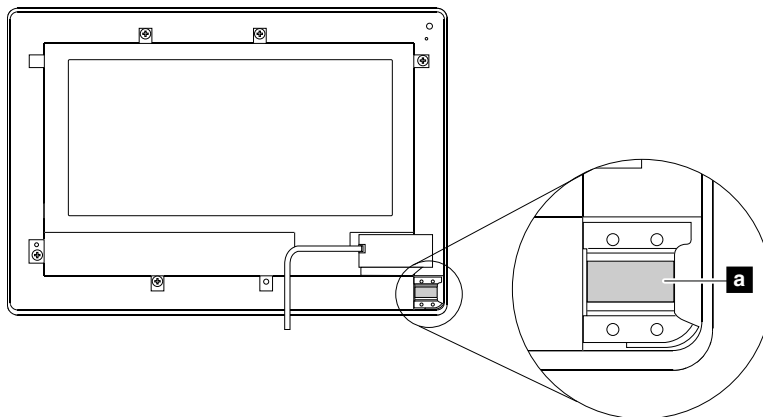
- “1010 ThinkPad Tablet Pen” on page 36
- “1020 Front-facing camera, rear-facing camera assembly, and internal battery” on page 36

### Removal steps of LCD module assembly



**When installing:** Make sure that the connectors are attached firmly.

**Note:** When you replace the LCD module assembly, apply the FCC label **a** to the assembly as shown in the following illustration.



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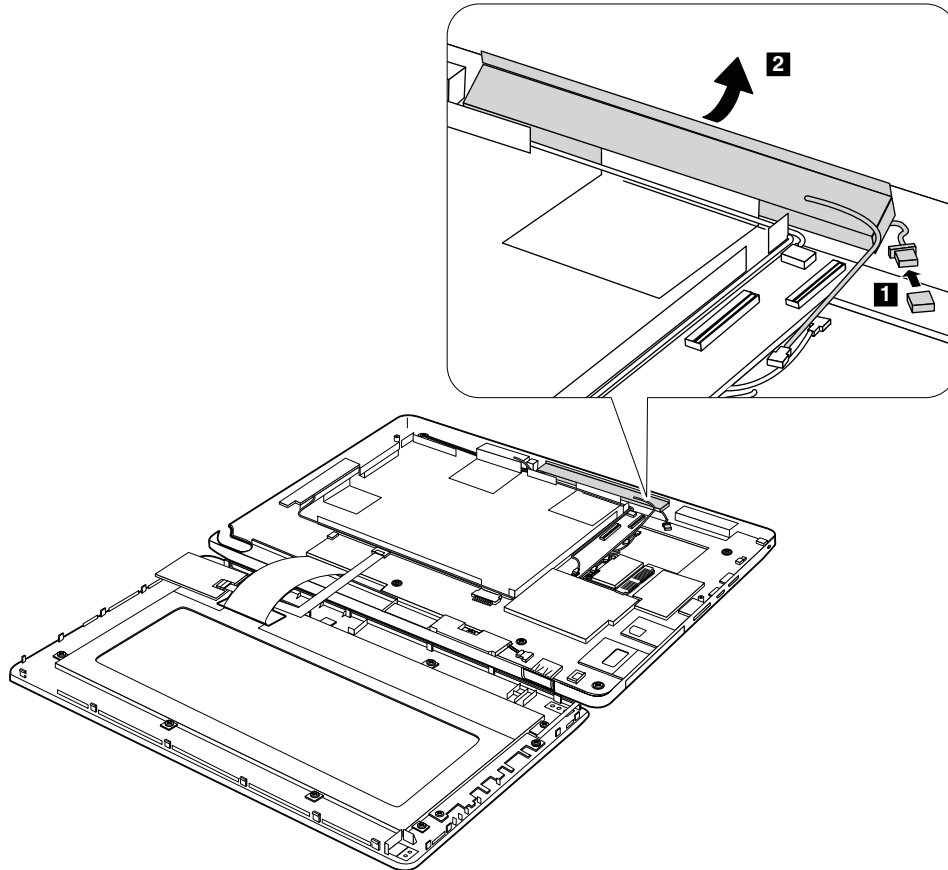
## 1070 Microphone assembly

For access, remove these FRUs in order:

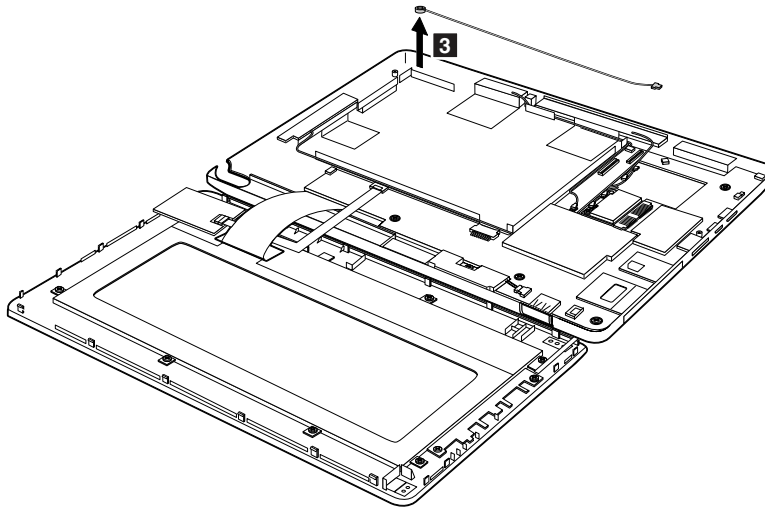
- “1010 ThinkPad Tablet Pen” on page 36
- “1020 Front-facing camera, rear-facing camera assembly, and internal battery” on page 36
- “1050 PCI Express Mini Card for wireless LAN and Bluetooth combo card” on page 42

### Removal steps of microphone assembly

Detach the wireless WAN antenna assembly in the direction as shown by the arrow **2**.



**When installing:** Make sure that the connector **1** is attached firmly to the system board.



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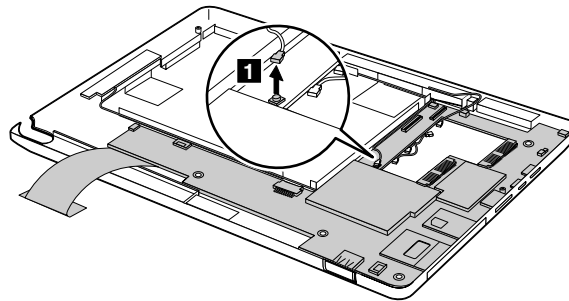
## 1080 System board, base cover, and LCD cable

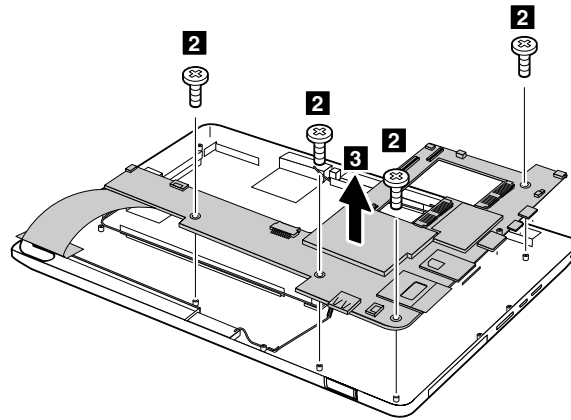
For access, remove these FRUs in order:

- “1010 ThinkPad Tablet Pen” on page 36
- “1020 Front-facing camera, rear-facing camera assembly, and internal battery” on page 36
- “1030 Speaker assembly” on page 40
- “1040 PCI Express Mini Card for wireless WAN” on page 41
- “1050 PCI Express Mini Card for wireless LAN and Bluetooth combo card” on page 42

### Removal steps of system board and base cover

In step **1**, unplug the jack by using the removal tool antenna RF connector (P/N: 08K7159) or pick the connector with your fingers and gently unplug it in the direction of the arrow.





Step	Screw (quantity)	Color	Torque
<b>2</b>	M2 × 3 mm, flat-head, nylon-coated (4)	Black	0.181 Nm (1.85 kgfcm)

### Applying labels to the base cover

The new base cover FRU is shipped with a kit containing labels of several kinds.

When you replace the base cover, apply the following labels:

**10** Homologation label

**11** Serial number label

Following labels need to be peeled off from the old base cover, and need to be put on the new base cover.

**1** Israel Homo Wireless LAN/Bluetooth label

**9** GEO label (for others)

**2** Non Encryption label

**12** Brazil Anatel 3G label

**3** Israel Homo 3G label

**13** Brazil Anatel Wireless LAN/Bluetooth label

**4** Indonesia Kit label

**14** SIRIM 3G label

**5** China Wireless WAN label

**15** SIRIM Wireless LAN/Bluetooth label

**6** China Wireless WAN label (for models with Huawei EM660 card)

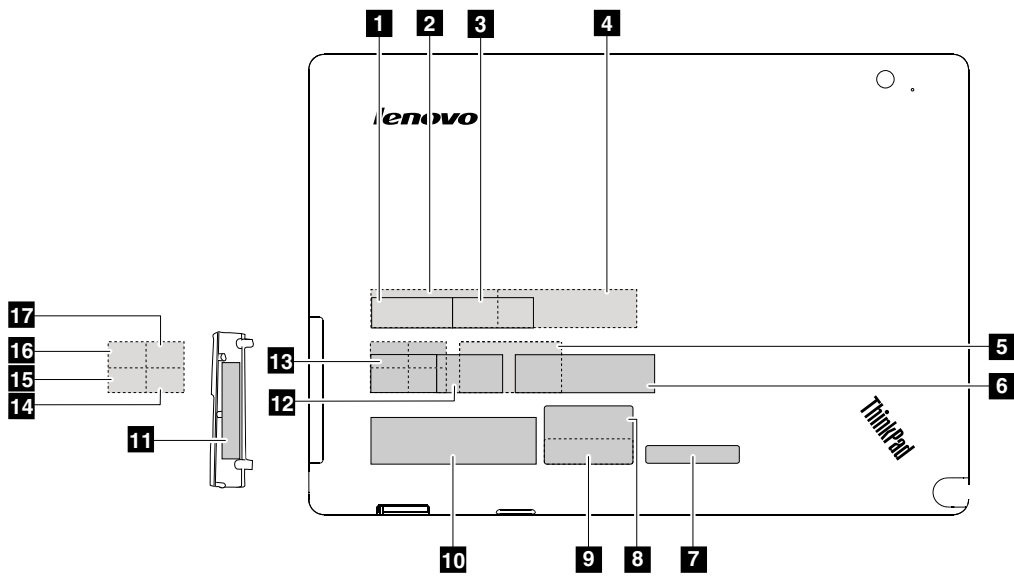
**16** Indonesia Postel Wireless LAN/Bluetooth label

**7** Wireless WAN MAC address label

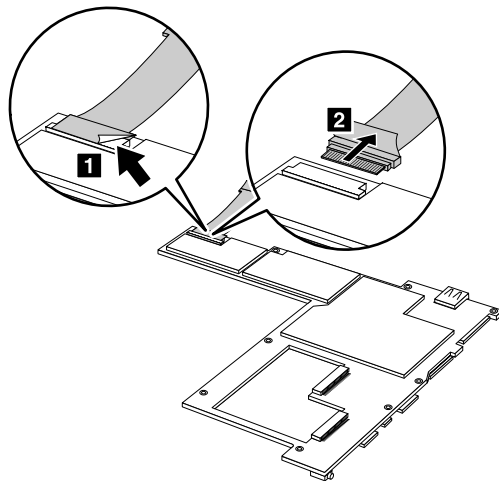
**17** Indonesia Postel 3G label

**8** GEO label (for China)

For the location of each label, refer to the following figure:



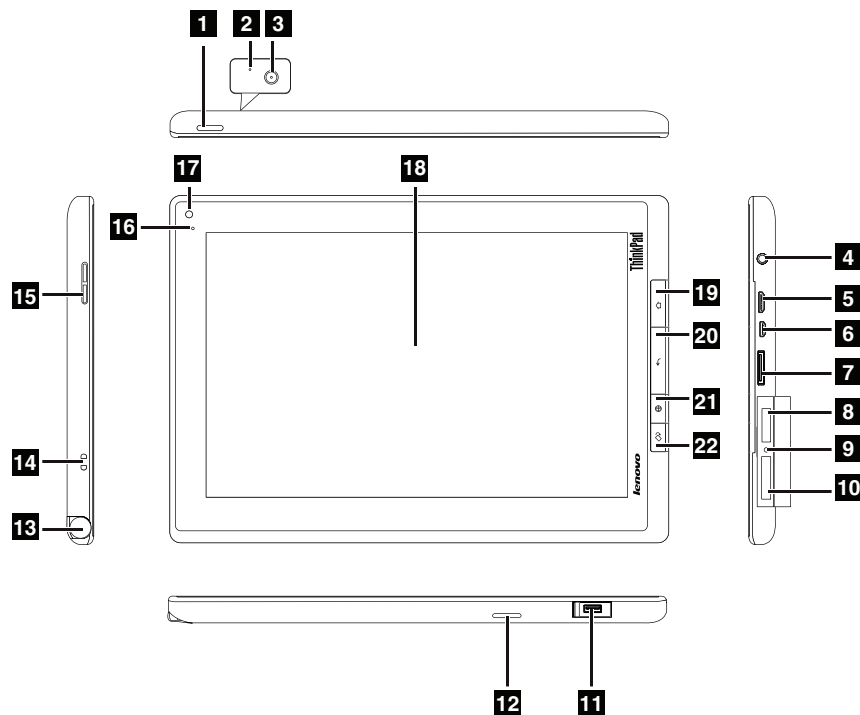
**Removal steps of LCD cable**



**When installing:** Make sure that the LCD cable is attached firmly to the system board.

## Chapter 8. Locating the controls and hardware components

This following illustration shows the locations of controls and hardware components on a ThinkPad Tablet.



**1** Power button

**2** Microphone

**3** Rear-facing camera

**4** Headphone or microphone connector

**5** Mini HDMI connector

**6** Micro-USB connector

**7** ThinkPad Tablet Dock connector

**8** SIM card slot

**9** Emergency reset hole

**10** 3-in-1 media card reader

**11** USB connector

**12** Speaker

**13** ThinkPad Tablet Pen slot

**14** ThinkPad Tablet Pen string holes

**15** Volume control button

**16** Ambient light sensor

**17** Front-facing camera

**18** Multi-touch display

**19** Home button

**20** Back button

**21** Browser button

**22** Screen rotation lock button





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## Chapter 9. Parts list

This section contains following lists of the service parts.

- “Overall” on page 52
- “ThinkPad Tablet Keyboard Folio Case **OP**” on page 55
- “Miscellaneous parts” on page 56
- “ThinkPad Tablet AC Charger” on page 57
- “Micro-USB cable” on page 58
- “Common service tools” on page 59

### Notes:

- Each FRU is available for all types or models, unless specific types or models are specified.
- FRU with specific models listed and described as xxU (where U is an example of a country designator) should be used for all models ending in U.
- FRU with specific models listed and described as 3Dx (where 3D is an example of a unique configuration) should be used for all of these models, unless specific country or region designator is specified.
- A CRU (customer replaceable unit) is identified by a single asterisk (\*) or two asterisks (\*\*) in the CRU ID column. An N in the CRU ID column means that the part is not a CRU. A single asterisk (\*) means that the part is a Self-service CRU; two asterisks (\*\*) means that the part is an Optional-service CRU.

### External CRU statement to customers:

Some problems with your product can be resolved with a replacement part you can install yourself, called a “Customer Replaceable Unit” or “CRU.” Some CRUs are designated as Self-service CRUs and others are designated as Optional-service CRUs. *Installation of Self-service CRUs is your responsibility; you may request that Lenovo installs an Optional-service CRU according to the warranty service for your product.* Where you are installing the CRU, Lenovo will ship the CRU to you. CRU information and replacement instructions are shipped with your product and are available from Lenovo at any time upon request. You may find a list of CRUs in the publications that ship with your product or at <http://www.lenovo.com/CRUs>. You may be required to return the defective part that is replaced by the CRU. When return is required: (1) return instructions, a prepaid shipping label, and a container will be included with the replacement CRU; and (2) you may be charged for the replacement CRU if Lenovo does not receive the defective part within thirty (30) days of your receipt of the replacement CRU. See your Lenovo Limited Warranty documentation for full details.

A ThinkPad Tablet contains the following types of CRUs:

- **Self-service CRUs:** These CRUs unplug or are held by no more than two screws. Examples of these types of CRUs include the ac charger and micro-USB cable. Other Self-service CRUs depending on product design might include the wireless card and ThinkPad Tablet Keyboard Folio Case.
  - **Optional-service CRUs:** These CRUs are isolated parts within the tablet that are concealed by an access panel that is typically secured by more than two screws. Once the access panel is removed, the specific CRU is visible.
- FRUs marked with **OP** are available as options.

# Overall

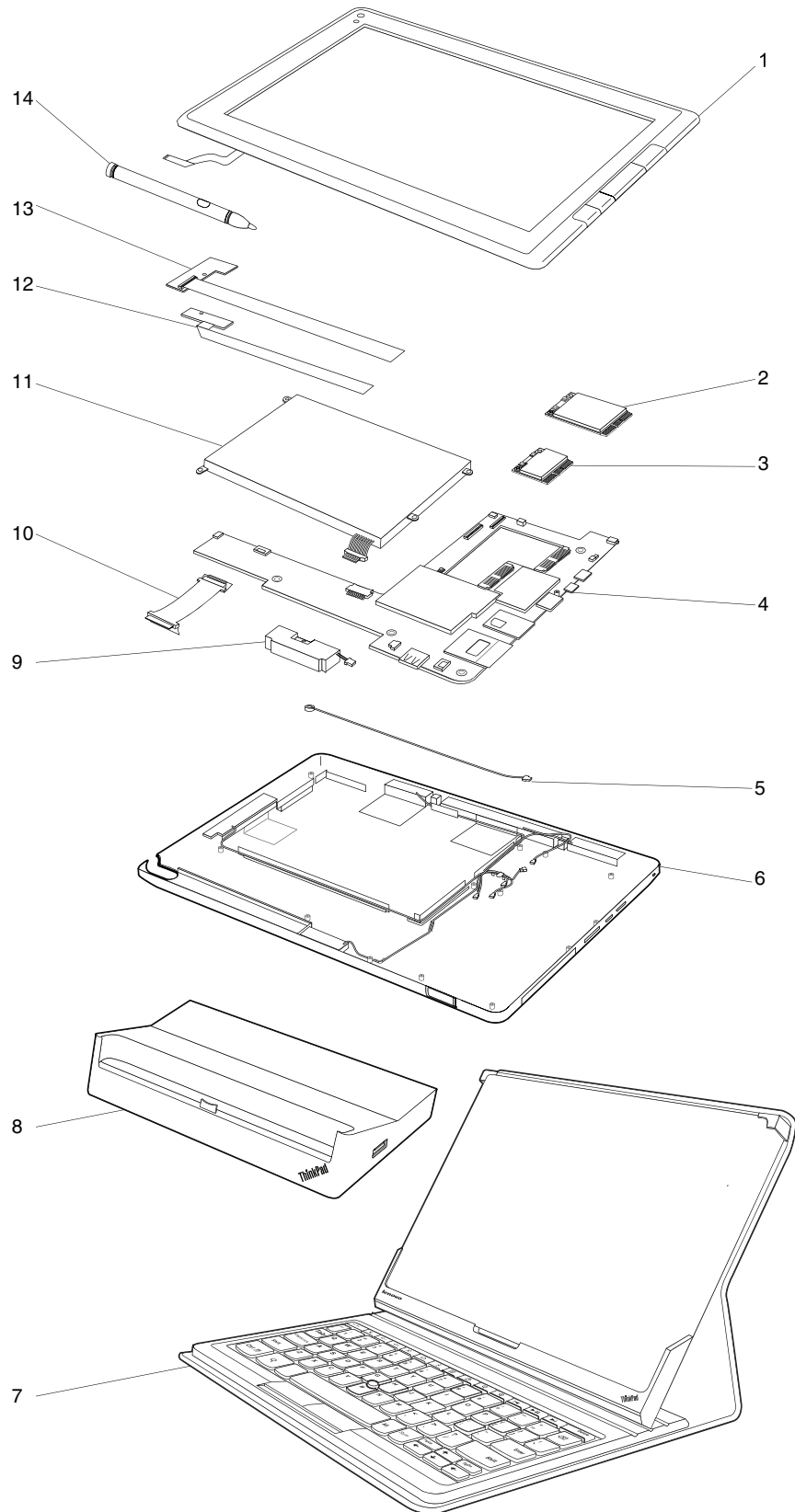


Table 2. Parts list - Overall

No.	FRU	FRU no.	CRU ID
1	LCD module assembly, 10.1" WXGA <ul style="list-style-type: none"> <li>• 1838-CTO, 22x, 23x, 24x, 25x, 26x, 27x, 28x, 29x, 2Ax, 2Bx, 2Cx, 2Dx, 2Ex, 2Fx, 2Gx, 2Hx, 2Jx, 2Kx, 2Lx, 2Mx, 2Nx, 2Px, 2Qx, 2Rx, 2Sx, 2Tx, 2Ux, 2Vx, 2Wx, 2Xx, 2Yx, 2Zx, 32x, 33x, 34x, 35x, 36x, 37x, 38x, 39x, 3Ax, 3Bx, 3Cx, 3Dx, 3Ex, 3Fx, 3Gx, 3Hx, 3Jx, 3Kx, 3Lx, 3Mx, 3Nx, 3Px, 3Qx, 3Rx, 3Sx, 3Tx, 3Ux, 3Vx, 3Wx, 3Xx, 3Yx, 3Zx, 42x, 43x, 44x, 45x, 46x, 47x, 48x, 49x, 4Ax, 4Bx, 4Cx, 4Dx, 4Ex</li> <li>• 1839-CTO, 22x, 23x, 24x, 25x, 26x, 27x, 28x, 29x, 2Ax, 2Bx, 2Cx, 2Dx, 2Ex, 2Fx, 2Gx, 2Hx, 2Jx, 2Kx, 2Lx, 2Mx, 2Nx, 2Px, 2Qx, 2Rx, 2Sx, 2Tx, 2Ux, 2Vx, 2Wx, 2Xx, 2Yx, 2Zx, 32x, 33x, 34x, 35x, 36x, 37x, 38x, 39x, 3Ax, 3Bx, 3Cx, 3Dx, 3Ex, 3Fx, 3Gx</li> </ul>	04W2150 04W2151 04W2152	N
2	Integrated Mobile Broadband (Gobi 3000) <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	60Y3257	N
2	Integrated Mobile Broadband (Gobi 3000), Indigo only SKU <ul style="list-style-type: none"> <li>• 1838-CTO, 29x, 2Ax</li> <li>• 1839-CTO</li> </ul>	60Y3291	N
2	Integrated Mobile Broadband (F5521gw) <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	60Y3279	N
2	Integrated Mobile Broadband (F5521gw), Malaysia SKU <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	60Y3267	N
2	Integrated Mobile Broadband (F5521gw), Indigo only SKU <ul style="list-style-type: none"> <li>• 1838-CTO, 2Bx, 2Cx, 2Dx, 2Ex, 2Fx, 2Gx, 2Mx, 2Nx, 2Px, 3Hx, 3Jx, 3Kx, 3Lx, 3Mx, 3Nx, 3Px, 3Qx, 3Rx, 3Sx, 3Tx, 3Ux, 3Vx, 3Wx, 3Xx, 3Yx, 3Zx, 42x, 43x, 44x, 45x, 46x, 47x, 48x, 49x, 4Ax, 4Bx, 4Cx, 4Dx, 4Ex</li> <li>• 1839-CTO, 2Hx, 2Kx, 2Mx, 2Nx, 2Px, 2Qx, 2Rx, 36x, 37x, 38x, 39x, 3Ax, 3Bx, 3Cx, 3Dx, 3Ex, 3Fx, 3Gx</li> </ul>	60Y3289	N
2	Integrated China Telecom Mobile Broadband (Huawei EM660) <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	60Y3239	N
3	Azuware BC4329 (SDIO) Wireless & Bluetooth combo card	60Y3285	N
4	System board assembly, 16 GB eMMC, 1 GB memory, with WWAN antenna, Non-DRM, China <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	04W3406	N
4	System board assembly, 16 GB eMMC, 1 GB memory, with WWAN antenna, DRM, U.K. <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	04W3400	N
4	System board assembly, 16 GB eMMC, 1 GB memory, with WWAN antenna, DRM, U.S. <ul style="list-style-type: none"> <li>• 1838-CTO, 22x, 23x, 24x, 29x, 2Bx, 2Gx, 2Hx, 2Mx, 2Qx, 2Sx, 2Vx, 2Wx, 2Xx, 2Yx, 2Zx, 32x, 33x, 34x, 35x, 36x, 37x, 38x, 3Hx, 3Jx, 3Kx, 3Lx, 3Mx, 3Nx, 3Px, 3Qx, 4Ax, 4Bx</li> <li>• 1839-CTO, 22x, 23x, 24x, 29x, 2Ax, 2Lx, 2Mx, 2Nx, 2Sx, 2Tx, 2Ux, 2Vx, 2Wx, 2Xx, 36x, 37x, 38x</li> </ul>	04W2147	N
4	System board assembly, 16 GB eMMC, 1 GB memory, with WWAN antenna, DRM, western European <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	04W3403	N

Table 2. Parts list - Overall (continued)

No.	FRU	FRU no.	CRU ID
4	System board assembly, 16 GB eMMC, 1 GB memory, with WWAN antenna, Non-DRM, worldwide <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	04W3409	N
4	System board assembly, 32 GB eMMC, 1 GB memory, with WWAN antenna, Non-DRM, China <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	04W3407	N
4	System board assembly, 32 GB eMMC, 1 GB memory, with WWAN antenna, DRM, U.K. <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	04W3401	N
4	System board assembly, 32 GB eMMC, 1 GB memory, with WWAN antenna, DRM, U.S. <ul style="list-style-type: none"> <li>• 1838-CTO, 25x, 26x, 2Ax, 2Cx, 2Ex, 2Jx, 2Lx, 2Nx, 2Tx, 39x, 3Ax, 3Bx, 3Cx, 3Rx, 3Sx, 3Tx, 3Ux, 3Vx, 3Wx, 3Xx, 3Yx, 4Cx, 4Dx</li> <li>• 1839-CTO, 25x, 26x, 2Bx, 2Cx, 2Dx, 2Kx, 2Px, 2Qx, 2Yx, 2Zx, 32x, 39x, 3Ax, 3Bx</li> </ul>	04W2148	N
4	System board assembly, 32 GB eMMC, 1 GB memory, with WWAN antenna, DRM, western European <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	04W3404	N
4	System board assembly, 32 GB eMMC, 1 GB memory, with WWAN antenna, Non-DRM, worldwide <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	04W3410	N
4	System board assembly, 64 GB eMMC, 1 GB memory, with WWAN antenna, Non-DRM, China <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	04W3408	N
4	System board assembly, 64 GB eMMC, 1 GB memory, with WWAN antenna, DRM, U.K. <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	04W3402	N
4	System board assembly, 64 GB eMMC, 1 GB memory, with WWAN antenna, DRM, U.S. <ul style="list-style-type: none"> <li>• 1838-CTO, 27x, 28x, 2Dx, 2Fx, 2Kx, 2Px, 2Rx, 2Ux, 3Dx, 3Ex, 3Fx, 3Gx, 3Zx, 42x, 43x, 44x, 45x, 46x, 47x, 48x, 49x, 4Ex</li> <li>• 1839-CTO, 27x, 28x, 2Ex, 2Fx, 2Gx, 2Hx, 2Jx, 2Rx, 33x, 34x, 35x, 3Cx, 3Dx, 3Ex, 3Fx, 3Gx,</li> </ul>	04W2149	N
4	System board assembly, 64 GB eMMC, 1 GB memory, with WWAN antenna, DRM, western European <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	04W3405	N
4	System board assembly, 64 GB eMMC, 1 GB memory, with WWAN antenna, Non-DRM, worldwide <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	04W3411	N
5	Microphone cable	04W3316	N
6	Base cover assembly, Wi-Fi only <ul style="list-style-type: none"> <li>• 1838-CTO, 22x, 23x, 24x, 2Vx, 2Wx, 2Xx, 2Yx, 2Zx, 32x</li> <li>• 1839-CTO, 22x, 23x, 24x, 2Sx, 2Tx, 2Ux</li> </ul>	04W3317	N

Table 2. Parts list - Overall (continued)

No.	FRU	FRU no.	CRU ID
6	Base cover assembly, 3G capable <ul style="list-style-type: none"> <li>• 1838-CTO, 25x, 26x, 27x, 28x, 29x, 2Ax, 2Bx, 2Cx, 2Dx, 2Ex, 2Fx, 2Gx, 2Hx, 2Jx, 2Kx, 2Lx, 2Mx, 2Nx, 2Px, 2Qx, 2Rx, 2Sx, 2Tx, 2Ux, 33x, 34x, 35x, 36x, 37x, 38x, 39x, 3Ax, 3Bx, 3Cx, 3Dx, 3Ex, 3Fx, 3Gx, 3Hx, 3Jx, 3Kx, 3Lx, 3Mx, 3Nx, 3Px, 3Qx, 3Rx, 3Sx, 3Tx, 3Ux, 3Vx, 3Wx, 3Xx, 3Yx, 3Zx, 42x, 43x, 44x, 45x, 46x, 47x, 48x, 49x, 4Ax, 4Bx, 4Cx, 4Dx, 4Ex</li> <li>• 1839-CTO, 25x, 26x, 27x, 28x, 29x, 2Ax, 2Bx, 2Cx, 2Dx, 2Ex, 2Fx, 2Gx, 2Hx, 2Jx, 2Kx, 2Lx, 2Mx, 2Nx, 2Px, 2Qx, 2Rx, 2Vx, 2Wx, 2Xx, 2Yx, 2Zx, 32x, 33x, 34x, 35x, 36x, 37x, 38x, 39x, 3Ax, 3Bx, 3Cx, 3Dx, 3Ex, 3Fx, 3Gx</li> </ul>	04W3318	N
7	ThinkPad Keyboard Folio Case <b>OP</b> (see “ThinkPad Tablet Keyboard Folio Case <b>OP</b> ” on page 55.)		
8	ThinkPad Tablet Dock <b>OP</b> <ul style="list-style-type: none"> <li>• 1838-CTO, 28x, 29x, 2Ax, 2Hx, 2Jx, 2Kx, 2Wx, 2Yx, 2Zx, 32x, 35x, 37x, 38x, 3Ax, 3Bx, 3Cx, 3Fx, 3Gx, 3Lx, 3Nx, 3Px, 3Qx, 3Ux, 3Wx, 3Xx, 3Yx, 44x, 46x, 47x, 48x, 49x</li> <li>• 1839-CTO, 28x, 2Cx, 2Dx, 2Gx, 2Hx, 2Jx, 2Kx, 2Ux, 2Xx, 32x, 35x, 38x, 3Bx, 3Ex, 3Gx</li> </ul>	04W2181	*
9	Speaker assembly	04W3314	N
10	LCD cable	04W3315	N
11	Internal battery, 2 cell Li-ion (24 Wh)	42T4963 42T4965	N
12	Rear-facing camera	04W2156	N
13	Front-facing camera	04W2155	N
14	ThinkPad Tablet Pen <b>OP</b> <ul style="list-style-type: none"> <li>• 1838-CTO, 23x, 24x, 25x, 26x, 27x, 28x, 29x, 2Ax, 2Bx, 2Cx, 2Dx, 2Ex, 2Fx, 2Gx, 2Hx, 2Jx, 2Kx, 2Sx, 2Tx, 2Ux, 2Vx, 2Wx, 2Xx, 2Yx, 2Zx, 32x, 33x, 34x, 35x, 36x, 37x, 38x, 39x, 3Ax, 3Bx, 3Cx, 3Dx, 3Ex, 3Fx, 3Gx, 3Hx, 3Jx, 3Kx, 3Lx, 3Mx, 3Nx, 3Px, 3Qx, 3Rx, 3Sx, 3Tx, 3Ux, 3Vx, 3Wx, 3Xx, 3Yx, 3Zx, 42x, 43x, 44x, 45x, 46x, 47x, 48x, 49x, 4Ax, 4Bx, 4Cx, 4Dx, 4Ex</li> <li>• 1839-CTO, 23x, 24x, 25x, 26x, 27x, 28x, 2Ax, 2Cx, 2Dx, 2Fx, 2Gx, 2Hx, 2Jx, 2Kx, 2Lx, 2Mx, 2Nx, 2Px, 2Qx, 2Rx, 2Sx, 2Tx, 2Ux, 2Vx, 2Wx, 2Xx, 2Yx, 2Zx, 32x, 33x, 34x, 35x, 36x, 37x, 38x, 39x, 3Ax, 3Bx, 3Cx, 3Dx, 3Ex, 3Fx, 3Gx</li> </ul>	04W3310	*
14	ThinkPad Tablet Pen without Alkaline battery <b>OP</b> <ul style="list-style-type: none"> <li>• 1838-CTO</li> <li>• 1839-CTO</li> </ul>	04W3398	*
—	ThinkPad Tablet AC Charger (see “ThinkPad Tablet AC Charger” on page 57.)		

## ThinkPad Tablet Keyboard Folio Case **OP**

For the following models, a ThinkPad Tablet Keyboard Folio Case can be ordered separately from Lenovo.

- 1838-CTO, 24x, 26x, 29x, 2Ax, 2Hx, 2Jx, 2Kx, 2Tx, 2Ux, 2Xx, 2Zx, 32x, 34x, 36x, 38x, 3Cx, 3Ex, 3Gx, 3Kx, 3Mx, 3Px, 3Qx, 3Tx, 3Vx, 3Xx, 3Yx, 43x, 45x, 47x, 48x, 49x, 4Ax, 4Bx, 4Cx, 4Dx, 4Ex
- 1839-CTO, 24x, 26x, 2Cx, 2Dx, 2Fx, 2Gx, 2Hx, 2Jx, 2Kx, 2Lx, 2Nx, 2Qx, 2Tx, 2Wx, 2Zx, 34x, 37x, 3Ax, 3Dx, 3Fx, 3Gx

Table 3. Parts list - ThinkPad Tablet Keyboard Folio Case **0P**

Language	P/N	CRU ID
Arabic	04W2159	**
Brazilian Portuguese	04W2180	
Canadian French (058)	04W2158	
Czech	04W2160	
Danish	04W2161	
French	04W2163	
German	04W2164	
Hebrew	04W2165	
Indian English	04W2247	
Italian	04W2166	
Japanese	04W2175	
Korean	04W2178	
Latin American Spanish	04W2179	
Norwegian	04W2167	
Portuguese	04W2168	
Russian	04W2169	
Swedish, Finnish	04W2170	
Spanish	04W2162	
Swiss	04W2171	
Thai	04W2177	
Traditional Chinese	04W2176	
Turkish	04W2172	
U.K. English	04W2173	
U.S. English	04W2157	
U.S. English (International, with a Euro symbol)	04W2174	

## Miscellaneous parts

Table 4. Parts list - Miscellaneous parts

FRU	P/N	CRU ID
Screw kit: <ul style="list-style-type: none"> <li>• M2 × 2 mm, flat-head, (1)</li> <li>• M2 × 2.5 mm, flat-head, (21)</li> <li>• M2 × 3 mm, flat-head, (8)</li> <li>• M2 × 4 mm, flat-head, (4)</li> <li>• M2 × 6 mm, flat-head, (10)</li> <li>• M2 × 8mm, flat-head, (4)</li> <li>• M2 × 9mm, flat-head, (2)</li> </ul>	04W3312	N
System miscellaneous parts kit	04W3313	N
Button kit	04W3311	N

Table 4. Parts list - Miscellaneous parts (continued)

FRU	P/N	CRU ID
Rubber kit	04W1783	N
Switch board	04W3412	N

## ThinkPad Tablet AC Charger

A ThinkPad Tablet AC Charger for a specific country or region usually is available only in that country or region.

### ThinkPad Tablet AC Charger

Table 5. Parts list - ThinkPad Tablet AC Charger (charger head)

FRU	FRU no.	CRU ID
ThinkPad Tablet AC Charger (charger head)	45N0158	*

Table 6. Parts list - ThinkPad Tablet AC Charger (snap-in prongs)

FRU	FRU no.	CRU ID
Snap-in prongs for U.S.	45N0160	*
Snap-in prongs for European countries	45N0162	
Snap-in prongs for U.K.	45N0164	
Snap-in prongs for China	45N0166	
Snap-in prongs for Australia	45N0168	
Snap-in prongs for Argentina	45N0170	
Snap-in prongs for Brazil	45N0172	
Snap-in prongs for Korea	45N0174	
Snap-in prongs for India	45N0176	
Snap-in prongs for South Africa	45N0178	

## ThinkPad Tablet Dock ac power adapter **OP**

For the following models, an ac power adapter can be ordered separately from Lenovo for a specific country or region.

- 1838-CTO, 28x, 29x, 2Ax, 2Hx, 2Jx, 2Kx, 2Wx, 2Yx, 2Zx, 32x, 35x, 37x, 38x, 3Ax, 3Bx, 3Cx, 3Fx, 3Gx, 3Lx, 3Nx, 3Px, 3Qx, 3Ux, 3Wx, 3Xx, 3Yx, 44x, 46x, 47x, 48x, 49x
- 1839-CTO, 28x, 2Cx, 2Dx, 2Gx, 2Hx, 2Jx, 2Kx, 2Ux, 2Xx, 32x, 35x, 38x, 3Bx, 3Ex, 3Gx

Table 7. Parts list - 2-pin ThinkPad Tablet Dock ac power adapter **OP**

FRU	FRU no.	CRU ID
2-pin (65 W, 20 V) adapter (models CTO, xxE, xxF, xxJ, xxL, xxP, xxS, xxU, xxY)	42T5282	*
2-pin (65 W, 20 V) adapter (models CTO, xxE, xxF, xxJ, xxL, xxP, xxS, xxU, xxY)	42T4423	
2-pin (65 W, 20 V) adapter (models CTO, xxE, xxF, xxJ, xxL, xxP, xxS, xxU, xxY)	42T4419	

Table 8. Parts list - 3-pin ThinkPad Tablet Dock ac power adapter **OP**

FRU	FRU no.	CRU ID
3-pin (65 W, 20 V) adapter (models CTO, xxA, xxB, xxG, xxH, xxK, xxM, xxQ, xxT, xxV)	42T5283	*
3-pin (65 W, 20 V) adapter (models CTO, xxA, xxB, xxG, xxH, xxK, xxM, xxQ, xxT, xxV)	42T4421	
3-pin (65 W, 20 V) adapter (models CTO, xxA, xxB, xxG, xxH, xxK, xxM, xxQ, xxT, xxV)	42T4417	

## Micro-USB cable

Table 9. Parts list - Micro-USB cable

FRU	FRU no.	CRU ID
Micro-USB cable	04W2153	*

## ThinkPad Tablet Dock power cord cable **OP**

For the following models, a ThinkPad Tablet Dock power cord cable can be ordered separately from Lenovo for a specific country or region.

- 1838-CTO, 28x, 29x, 2Ax, 2Hx, 2Jx, 2Kx, 2Wx, 2Yx, 2Zx, 32x, 35x, 37x, 38x, 3Ax, 3Bx, 3Cx, 3Fx, 3Gx, 3Lx, 3Nx, 3Px, 3Qx, 3Ux, 3Wx, 3Xx, 3Yx, 44x, 46x, 47x, 48x, 49x
- 1839-CTO, 28x, 2Cx, 2Dx, 2Gx, 2Hx, 2Jx, 2Kx, 2Ux, 2Xx, 32x, 35x, 38x, 3Bx, 3Ex, 3Gx

Table 10. Parts list - 2-pin ThinkPad Tablet Dock power cord cable **OP**

Country or region	FRU no.		CRU ID
Argentina • models -CTO, xxY	42T5020	42T5105	*
Brazil • models -CTO, xxP	42T5180	42T5183	
Canada, U.S. • models -CTO, xxF, xxL, xxS, xxU	42T5008	42T5093	
Japan • models -CTO, xxE, xxJ	42T5014	42T5099	

Table 11. Parts list - 3-pin ThinkPad Tablet Dock power cord cable **OP**

Country or region	FRU no.		CRU ID
Australia, New Zealand • models -CTO, xxM	42T5050	42T5135	*
Bangladesh, Sri Lanka, South Africa • models -CTO, xxG	42T5056	42T5141	
Canada, U.S. • models -CTO, xxG, xxT	42T5004	42T5089	
China (P.R.C.) (other than Hong Kong S.A.R.) • models -CTO, xxC	42T5065	42T5150	
Denmark • models -CTO, xxG	42T5041	42T5126	
European countries • models -CTO, xxG	42T5029	42T5114	



Table 11. Parts list - 3-pin ThinkPad Tablet Dock power cord cable **0P** (continued)

Country or region	FRU no.		CRU ID
India • models -CTO, xxQ	42T5083	42T5168	
Israel • models -CTO, xxG	42T5062	42T5147	
Italy • models -CTO, xxG	42T5047	42T5132	
Korea • models -CTO, xxK	42T5077	42T5162	
Switzerland • models -CTO, xxG	42T5044	42T5129	
Taiwan • models -CTO, xxV	42T5071	42T5156	
U.K., China (Hong Kong S.A.R.) • models -CTO, xxB, xxG, xxH	42T5035	42T5120	

## Common service tools

Table 12. Parts list - Common service tools

Tool	P/N
Screwdriver kit	95F3598
1/4" drive spinner handle	1650840
1/4" Sq. to 1/4" hex torx adapter	93F2838
TR7-TR-10 tamper resistant torx bits	00P6967
Removal tool antenna RF connector	08K7159
USB cable	40Y8704
Test card for integrated Smart Card	42W7820

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