ThinkPad® R50 Series
Service and Troubleshooting Guide
Before using this information and the product it supports, be sure to read the general information under "Important safety information" on page v, Appendix A, "Wireless related information," on page 43, Appendix B, "Warranty information," on page 47, and Appendix D, "Notices," on page 75.
Σημαντικές οδηγίες σχετικά με την ασφάλεια

Οι πληροφορίες αυτές μπορούν να σας βοηθήσουν να χρησιμοποιείτε τον προσωπικό σας υπολογιστή IBM® με ασφάλεια. Ακολουθήστε και φυλάξτε όλες τις πληροφορίες που παρέχονται μαζί με τον υπολογιστή IBM. Οι πληροφορίες που περιέχονται σε αυτό το έγγραφο δεν τροποποιούν τους όρους της σύμβασης αγοράς που συνάψατε ούτε τη Δήλωση Περιορισμένης Εγγύησης της IBM.

Η ασφάλεια των πελατών είναι σημαντική για την IBM. Τα προϊόντα μας είναι σχεδιασμένα να είναι ασφαλή και αποτελεσματικά. Ωστόσο, οι προσωπικοί υπολογιστές είναι ηλεκτρονικά συσκευές. Τα καλόδια βεβαίωσης, οι μετασχηματιστές και άλλα εξοπλισμοί τους μπορούν να δημιουργήσουν κινδύνους που θα μπορούσαν να έχουν ως αποτέλεσμα την πρόκληση τραυματισμών ή ζημιών, ειδικά σε περίπτωση κακής χρήσης τους. Για να μειώσετε αυτούς τους κινδύνους, ακολουθήστε τις οδηγίες που παρέχονται με το προϊόν σας, δώστε σημασία σε όλες τις προειδοποιήσεις στο προϊόν και στις οδηγίες λειτουργίας και διαβάστε προεκτάσεις τις πληροφορίες που περιέχονται σε αυτό το έγγραφο.

Ακολουθώντας προεκτάσεις τις πληροφορίες που περιέχονται σε αυτό το έγγραφο και παρέχονται με το προϊόν σας, μπορείτε να συμβάλλετε στην προστασία σας από κινδύνους και να δημιουργήσετε ένα ασφαλέστερο υπολογιστικό περιβάλλον εργασίας.

Σημείωση: Οι πληροφορίες αυτές περιέχουν αναφορές σε μετασχηματιστές και μπαταρίες. Πέραν του φορτισμού προσωπικών υπολογιστών, η IBM παρέχει ορισμένα προϊόντα (όπως π.χ. ηλεκτρικοί μετασχηματιστές) με εξωτερικούς μετασχηματιστές. Αν έχετε ένα τέτοιο προϊόν, οι πληροφορίες αυτές ισχύουν για το προϊόν σας. Επιπρόσθετα, ο υπολογιστής σας μπορεί να περιέχει μια εσωτερική μπαταρία σε μέγεθος νομίσματος, η οποία τροφοδοτεί με ηλεκτρικό ρεύμα το ρολόι του συστήματος σας ακόμα και όταν η μηχανή είναι αποσυνδεδεμένη. Επομένως οι πληροφορίες σχετικά με την ασφάλεια των μπαταριών ισχύουν για όλους τους υπολογιστές.

Συνθήκες που πρέπει να αντιμετωπίζονται άμεσα

Τα προϊόντα μπορεί να υποστούν ζημιές λόγω κακής χρήσης ή αμέλειας. Σε ορισμένες περιπτώσεις, οι ζημιές μπορεί να είναι τόσο σοβαρές ώστε το προϊόν να μην πρέπει να χρησιμοποιηθεί ξανά έως ότου επιθεωρηθεί και, αν είναι αναγκαίο, επισκευαστεί από εξουσιοδοτημένο τεχνικό.

Όπως και με κάθε ηλεκτρονική συσκευή, πρέπει να προσέχετε το προϊόν όταν είναι αναμμένο. Σε πολύ άνετες περιπτώσεις, μπορεί να αισθανθείτε μια ομήρι ή να παρατηρήσετε καπνό ή σπίδες προερχόμενες από τη μηχανή σας. Η μπορεί να ακούσετε ήχους που υποδηλώνουν κάποιο πρόβλημα. Οι συνθήκες αυτές μπορεί
απλώς να σημαίνουν ότι έχει υποστεί βλάβη κάποιο εσωτερικό εξάρτημα, με ασφάλη και ελεγχόμενο τρόπο. Μπορεί όμως και να υποδηλώνουν πιθανό πρόβλημα ασφαλείας. Ωστόσο, μη ρισκάρετε και μην προσπαθήσετε να διαγνώσετε το πρόβλημα μόνος σας.

Ελέγχετε συχνά τον υπολογιστή σας και τα εξαρτήματά του, ώστε να εντοπίζετε τυχόν ζημιές, φθορά ή ενδείξεις κινδύνου. Αν υπάρχει οποιαδήποτε αβεβαιότητα σχετικά με την κατάσταση ενός εξαρτήματος, μη χρησιμοποιήσετε το προϊόν.

Επίκοινωστε με το Κέντρο Υποστήριξης της IBM ή τον κατασκευαστή του προϊόντος για οδηγίες σχετικά με τον έλεγχο του προϊόντος και, αν είναι απαραίτητο, την επισκευή του. Οι τηλεφωνικοί αριθμοί για το Κέντρο Υποστήριξης της IBM που εξυπηρετεί τη χώρα σας βρίσκονται στην ενότητα Calling IBM αυτού του εγχειριδίου.

Στην απίθανη περίπτωση που παρατηρήσετε οποιαδήποτε από τις συνθήκες που αναφέρονται παρακάτω, ή αν έχετε οποιαδήποτε ανησυχίες σχετικά με την ασφάλεια του προϊόντος, πάψτε να το χρησιμοποιείτε και αποσυνδέστε το από την πρίζα και από τις τηλεπικοινωνιακές γραμμές έως ότου μιλήσετε με το Κέντρο Υποστήριξης της IBM για περαιτέρω καθοδήγηση.

- Καλώδια ρεύματος, φις, μετασχηματιστές, επεκτάσεις καλωδίων, συσκευές προστασίας από υπερτάσεις ή τροφοδοτικά που έχουν κοπεί, ραγίσει, σπάσει ή υποστεί ζημιές.
- Ενδείξεις υπερθέρμανσης, καπνού, σπίθας ή φωτιάς.
- Ζημιές σε μια μπαταρία (όπως ρωγμές ή παραμόρφωση), αποφόρτιση μπαταρίας ή υποδηλώσεις ζημιών ουσιών επάνω στην μπαταρία.
- Περίεργοι ήχοι ή δυνατή οσμή προέρχονται από το προϊόν.
- Ενδείξεις ότι έχει χυθεί υγρό ή έχει πέσει κάποιο αντικείμενο επάνω στον υπολογιστή, το καλώδιο ρεύματος ή το μετασχηματιστή.
- Έκθεση του υπολογιστή, του καλώδιοι ρεύματος ή του μετασχηματιστή σε νερό.
- Πτώση του προϊόντος ή άλλες ζημιές στο προϊόν.
- Μη κανονική λειτουργία του προϊόντος όταν ακολουθείτε τις οδηγίες λειτουργίας.

Σημείωση: Αν παρατηρήσετε τέτοιες συνθήκες σε προϊόν μη-IBM (π.χ. μια επέκταση καλωδίου), πάψτε να χρησιμοποιείτε αυτό το προϊόν έως ότου επικοινωνήσετε με τον κατασκευαστή του προϊόντος για περαιτέρω οδηγίες, ή όταν προωθητείτε κατάλληλο προϊόν αντικατάστασης.

Γενικές οδηγίες ασφαλείας

Τηρείτε πάντα τις ακόλουθες προφυλάξεις για να μειώσετε τον κίνδυνο τραυματισμού και πρόκλησης ζημιών.
Συντήρηση
Μην επιχειρήσετε να κάνετε συντήρηση ενός προϊόντος μόνος σας, εκτός αν σας ζητηθεί συγκεκριμένα από το Κέντρο Υποστήριξης της IBM. Χρησιμοποιείτε μόνο εξουσιοδοτημένο από την IBM παροχέα υπηρεσιών, εγκεκριμένο για την επισκευή του συγκεκριμένου προϊόντος.

Σημείωση: Ορισμένα εξαρτήματα μπορούν να αναβαθμιστούν ή να αντικατασταθούν από τον πελάτη. Τα εξαρτήματα αυτά ονοµάζονται Αντικαθιστώµενες από τον Πελάτη Μονάδες (Customer Replaceable Units - CRU). Η IBM προσδιορίζει ρητώς ποια εξαρτήµατα είναι CRU και παρέχει τεκµηρίωση µε οδηγίες όταν ενδείκνυται η εγκατάσταση τους από τον πελάτη. Πρέπει να ακολουθείτε πιστά αυτές οδηγίες όταν αντικαθίστατε CRU.

Καλώδια ρεύματος και μετασχηµατιστές
Χρησιμοποιείτε µόνο τα καλώδια ρεύµατος και τους μετασχηµατιστές που παρέχονται από τον κατασκευαστή του προϊόντος. Το καλώδιο ρεύµατος και ο μετασχηµατιστής προορίζονται αποκλειστικά για χρήση µε αυτό το προϊόν. Δεν πρέπει να χρησιµοποιηθούν σε καµία περίπτωση µε οποιοδήποτε άλλο προϊόν.

Ποτέ µην τυλίγετε ένα καλώδιο ρεύµατος γύρω από το μετασχηµατιστή ή άλλο αντικείµενο. Αν το κάνετε, µπορεί το καλώδιο να υφιστάται επικίνδυνο. Να προστατεύετε τα καλώδια και τους μετασχηµατιστές από µυθικά.

Πάντα να συνδέετε τα καλώδια ρεύµατος και τα καλώδια σήµατος µε τη σωστή σειρά και να εξασφαλίζετε ότι ολά τα καλώδια ρεύµατος έχουν συνδεθεί πλήρως και µε ασφάλεια στις πρίζες.
Επεκτάσεις

Όταν συνδέετε τον ηλεκτρόλογο, κυκλώματος υπερφορτώνετε με γειωμένη παρακάμψη από έναν καλώδιο. Αν χρησιμοποιήσετε πολύπριζη, το φορτίο δεν πρέπει να υπερβαίνει τις προδιαγραφές του πολύπριζου. Για αυτό, ερωτήσεις σχετικά με τα ηλεκτρικά φορτία και τις προδιαγραφές, συμβουλευτείτε έναν ηλεκτρολόγο.

Φις και πρίζες

Αν κάποια πρίζα που skopoeiête να χρησιμοποιήσετε με τον υπολογιστή έχει ενδείξεις ζημιών ή διάβρωσης, μην τη χρησιμοποιήσετε έως ότου αντικατασταθεί από ηλεκτρολόγο.

Μη λυγίζετε ή τροποποιείτε το φις. Αν το φις έχει υποστεί ζημίες, επικοινωνήστε με τον κατασκευαστή για να το αντικαταστήσετε.

Ορισμένα προϊόντα έχουν φις τριών κορδελικών. Το φις αυτό μπορεί να συνδεθεί μόνο σε γειωμένη ηλεκτρική πρίζα. Αυτό γίνεται για λόγους ασφάλειας. Μην παρακάμψετε αυτή την προφύλαξη επιχειρώντας να συνδέσετε την πρίζα σε μη γειωμένη πρίζα. Αν δεν μπορείτε να συνδέσετε το φις στην πρίζα, επικοινωνήστε με έναν ηλεκτρολόγο για να προμηθευτείτε έναν εγκεκριμένο προσαρμογέα ή για να αντικαταστήσετε την πρίζα με άλλη, κατάλληλη πρίζα. Ποτέ μην υπερφορτώνετε μια πρίζα. Το συνολικό φορτίο του συστήματος δεν πρέπει να υπερβαίνει το 80% του φορτίου που προβλέπεται από τις προδιαγραφές του κυκλώματος διακλάδωσης. Για αυτό, ερωτήσεις σχετικά με τα ηλεκτρικά φορτία και τις προδιαγραφές του κυκλώματος διακλάδωσης, συμβουλευτείτε έναν ηλεκτρολόγο.

Βεβαιωθείτε ότι η πρίζα ρεύματος που χρησιμοποιείτε είναι σωστά καλωδιωμένη, εύκολα προσβάσιμη και βρίσκεται κοντά στον εξοπλισμό. Μην τεντώνετε τα καλώδια ρεύματος με τρόπο που μπορεί να προκαλέσει φθορά στα καλώδια.

Συνδέτετε και αποσυνδέτετε τον εξοπλισμό από την πρίζα με προσοχή.

Μπαταρίες

Σημαντική σημείωση σχετικά με τις μπαταρίες ιδιότητας

Όταν μια μπαταρία ιδιότητας λίθιου υπερθερμαίνεται ή βραχυκυκλώνεται, μπορεί να συμβεί η θερμοκρασία ή η πίεση στο εσωτερικό των στοιχείων της μπαταρίας. Τα
Στοιχεία είναι σχεδιασμένα να εκλύουν πίεση και υλικά μέσω ανοιγμάτων στο
περίβλημα των στοιχείων. Ο σχεδιασμός αυτός αποτελεί σημαντικό
χαρακτηριστικό ασφάλειας.

Πελάτες της IBM έχουν αναφέρει ότι οι μπαταρίες ιόντων λιθίου στους φορητούς
υπολογιστές τους έχουν υπερθερμανθεί και "εκλύουν" υλικά. Μερικοί πελάτες
ανέφεραν ότι ακούσαν ήχους αμέσως πριν συμβεί αυτό. Σε τέτοια περιστατικά
μπορεί να εκλυθούν καινούργια, στίχους ή ακόμα και φλόγες από τη μπαταρία. Η
μπαταρία μπορεί να υπερθερμανθεί υπερβολικά και η θερμότητα αυτή μπορεί να
αλλοιώσει το σχήμα της κάτω επιφάνειας του φορητού υπολογιστή. Σε ακραίες
περιπτώσεις, η θερμότητα μπορεί να δημιουργήσει τρίπτυτα στην κάτω επιφάνεια του
υπολογιστή. Τέτοιου είδους περιστατικά δεν έχουν αναφερθεί μόνο για προϊόντα ή
φορητούς προσωπικούς υπολογιστές της IBM.

Συνιστάται στους χρήστες να ακολουθούν τις παρακάτω οδηγίες και να
επισκέπτονται τακτικά την ιστοσελίδα Safe and Effective Computing της IBM στη
Οι φορητοί προσωπικοί υπολογιστές συνήθως περιλαμβάνουν μια επαναφόρτιση
μπαταρία.

Οι φορητοί και επιτραπέζιοι προσωπικοί υπολογιστές μπορεί επίσης να
περιλαμβάνουν μια εσωτερική μπαταρία σε σχήμα νομίσματος που τροφοδοτεί το
ρολόι του συστήματος όταν η μηχανή είναι αποσυνδεδεμένη από την πρίζα. Οι
ακόλουθες πληροφορίες αφορούν όλες αυτές τις μπαταρίες:
• Χρησιμοποιείτε μόνο μπαταρίες και συσκευές επαναφόρτισης που είναι
eγκεκριμένες από την IBM για χρήση με το συγκεκριμένο προϊόν.
• Ακολουθείτε τις οδηγίες που παρέχονται μαζί με το προϊόν σας όταν
φορτιστεί και χρησιμοποιείτε τη μπαταρία.
• Μην επιχειρήσετε να ανοίξετε ή να επισκευάσετε τη μπαταρία. Επικοινωνήστε
με το Κέντρο Υποστήριξης της IBM για βοήθεια.
• Μη συνθλίψετε, τρυπήσετε ή λήψετε τη μπαταρία και μη βραχυκυκλώσετε τους
ακροδέκτες της.
• Μην εκθέσετε τη μπαταρία σε υγρά.
• Διατηρείτε τις περιοχές γύρω από το χώρο τοποθέτησης της μπαταρίας, τις
ηλεκτρικές υποδοχές και τις θήκες συσκευών καθαρές και χωρίς υπολείμματα
υστήρες, ειδικά μεταλλικών.
• Αν η μπαταρία σας έχει υποστεί βλάβη, ή παρατηρήσετε διαρροή από τη
μπαταρία ή παρουσιά έξων υλικών στα άκρα της μπαταρίας, πάψτε να τη
χρησιμοποιείτε, αντικαταστήστε τη με εγκεκριμένη μπαταρία και φροντίστε για
τη σωστή απόρριψη της παλίρροιας μπαταριάς.
• Η επαναφόρτιση μπαταρία του φορητού προσωπικού υπολογιστή σας θα έχει
καλύτερη απόδοση και μεγαλύτερη διάρκεια ζωής αν ακολουθείτε περιοδικά την
εξής διαδικασία: Αρτηρίστε τον υπολογιστή να λειτουργεί με την μπαταρία έως
ότου ακουστεί ο προειδοποιητικός ήχος που δηλώνει ότι η μπαταρία έχει
σχεδόν αποφορτιστεί πλήρως και επαναφορτίστε τη μπαταρία ώρα στο 100% της χρονικότητάς της. Δεν πρέπει να αφήνετε τη μπαταρία πλήρως αποφορτισμένη για μεγάλο χρονικό διάστημα (αυτό ονομάζεται “βαθιά αποφόρτιση”).

- Οι μπαταρίες μπορεί να βρεθούν σε κατάσταση βαθιάς αποφόρτισης αν παραμείνουν αχρησιμοποιημένες για μεγάλο χρονικό διάστημα. Αυτό μπορεί να μειώσει τη διάρκεια ζωής της μπαταρίας και να αυξήσει τον κίνδυνο βραχυκυκλώματος. Φορτίζετε τακτικά τις μπαταρίες, συμπεριλαμβανομένων οποιωνδήποτε εφεδρικών μπαταριών, για να αποφύγετε πιθανά προβλήματα. Συνιστάται η επαναφόρτιση των μπαταριών στο 40% της χρονικότητάς τους τουλάχιστον μία φορά ανά εξάμηνο.

- Αν η μπαταρία σας δεν φορτίζεται, λειτουργεί για μικρό χρονικό διάστημα ή ανάβει η κόκκινη φωτεινή ένδειξη που δηλώνει ότι υπάρχει πρόβλημα με τη μπαταρία (αυτή η λειτουργία μπορεί να μην υπάρχει στο μοντέλο σας), θα πρέπει να πάψετε να τη χρησιμοποιείτε και να προμηθευτείτε καινούργια μπαταρία της IBM. Παράτετε να παρατηρήσετε μείωση της απόδοσής όταν χρησιμοποιείτε τον υπολογιστή χωρίς μπαταρία, μπορείτε να συνεχίσετε να τον χρησιμοποιείτε μόνο με το τροφοδοτικό έως ότου παραλάβετε την καινούργια μπαταρία. Αν η απόδοση δεν βελτιωθεί με την καινούργια μπαταρία, επικοινωνήστε με το Κέντρο Υποστήριξης της IBM για βοήθεια.

**Θερμότητα και εξαερισμός προϊόντος**

Οι υπολογιστές παράγουν θερμότητα όταν είναι αναμμένοι και κατά τη φόρτιση των μπαταριών. Οι χρήστες προσωπικοί υπολογιστών παράγουν σημαντική ποσότητα θερμότητας λόγω του μικρού τους μεγέθους. Τηρείτε πάντα τις ακόλουθες προφυλάξεις:

- Μην αφήνετε τη βάση του υπολογιστή σε εσωφάρη με το μηδέν ή άλλο μέρος του σώματος σας για μεγάλο χρονικό διάστημα όταν είναι σε λειτουργία ο υπολογιστής ή φορτίζεται η μπαταρία. Ο υπολογιστής παράγει κάποια θερμότητα κατά τη διάρκεια της κανονικής λειτουργίας του. Η παρατεταμένη εσωφάρη με το σώμα μπορεί να προκαλέσει δυσφορία ή ακόμα και εγκαύματα.

- Μην χρησιμοποιείτε τον υπολογιστή ή φορτίζετε την μπαταρία κοντά σε εύφλεκτα υλικά ή σε εκρηκτικό περιβάλλον.

- Οι σχημές εξαερισμού, οι ανεμιστήρες ή/και οι ψυκτές του προϊόντος παρέχονται για σκοπούς ασφάλειας, άνεσης και αξιόπιστης λειτουργίας. Τα εξαρτήματα αυτά μπορεί να μπλοκαριστούν κατά λάθος αν το προϊόν τοποθετηθεί επάνω σε κρεβάτι, καναπέ, χαλί ή άλλη ενέλεκτη επιφάνεια. Ποτέ μην μπλοκάρετε, καλύπτετε ή απενεργοποιείτε αυτά τα εξαρτήματα.

**Ασφάλεια των μονάδων CD και DVD**

Οι μονάδες CD και DVD περιστρέφουν δίσκους με μεγάλη ταχύτητα. Αν κάποιο CD ή DVD έχει ρομπές ή άλλη φυσική ζημία, μπορεί να σπάσει ή να διαλυθεί κατά τη χρήση της μονάδας CD. Για να προστατευθείτε από πιθανό τραυματισμό σε τέτοιου περίπτωση και να μειώσετε το κίνδυνο βλάβης της μηχανής σας, κάντε τα ακόλουθα:

X ThinkPad® R50 Series Service and Troubleshooting Guide
• Αποθηκεύετε πάντα τους δίσκους CD/DVD στην αρχική τους συσκευασία.
• Αποθηκεύετε πάντα τους δίσκους CD/DVD μακριά από τις ακτίνες του ήλιου και μακριά από πηγές θερμότητας.
• Αφαιρείτε τους δίσκους CD/DVD από τον υπολογιστή όταν δεν χρησιμοποιούνται.
• Μη λυγίζετε τους δίσκους CD/DVD και μην τους βάζετε βίαια μέσα στον υπολογιστή ή στη θήκη τους.
• Ελέγχετε τους δίσκους CD/DVD πριν από κάθε χρήση για να βεβαιωθείτε ότι δεν έχουν ρωγμές. Μη χρησιμοποιείτε δίσκους που έχουν ρωγμές ή άλλες ζημιές.

Πρόσθετες πληροφορίες ασφάλειας

⚠️ ΚΙΝΔΥΝΟΣ

Το ηλεκτρικό ρεύμα στα καλώδια ρεύματος, τηλεφώνου και επικοινωνίας είναι επικίνδυνο. Για να αποφύγετε τον κίνδυνο ηλεκτροπληξίας, όταν εγκαθιστάτε, μετακινείτε ή ανοίγετε τα καλώδια του προϊόντος ή των προσαρτημένων συσκευών, συνδέετε και αποσυνδέετε τα καλώδια όπως περιγράφεται παρακάτω. Αν παρέχεται τριαγωγικό καλώδιο ρεύματος με αυτό το προϊόν, πρέπει να συνδέετε σε σωστά γειωμένη πρίζα.
Σύνδεση:

1. Κλείστε όλους τους διακόπτες.
2. Συνάδεστε πρώτα όλα τα καλώδια στις συσκευές.
3. Συνάδεστε τα καλώδια σήματος στις υποδοχές.
4. Συνάδεστε το καλώδιο ρεύματος στην πρίζα.
5. Ανάμετα τις συσκευές.

Αποσύνδεση:

1. Κλείστε όλους τους διακόπτες.
2. Αποσυνάδεστε πρώτα το καλώδιο ρεύματος από την πρίζα.
3. Αποσυνάδεστε τα καλώδια σήματος από τις υποδοχές.
4. Αποσυνάδεστε όλα τα καλώδια από τις συσκευές.
ΚΙΝ∆ΥΝΟΣ

Μειώστε τον κίνδυνο πυρκαγιάς και ηλεκτροπληξίας τηρώντας πάντα τις βασικές προφυλάξεις, όπως:

- Μη χρησιμοποιείτε τον υπολογιστή μέσα ή κοντά σε νερό.
- Κατά τη διάρκεια καταιγίδας:
  - Μη χρησιμοποιείτε τον υπολογιστή σας με καλωδιακή τηλεφωνική σύνδεση.
  - Μη συνδέετε ή αποσυνδέετε το καλώδιο από την τηλεφωνική υποδοχή στον τοίχο.

ΚΙΝ∆ΥΝΟΣ: Αποθήκευση του πακέτου επαναφορτίσιμων μπαταριών

Το πακέτο μπαταριών πρέπει να αποθηκεύεται σε θερμοκρασία δωματίου, φορτισμένο σε ποσοστό περίπου 30 - 50 % της χωρητικότητάς του. Συνιστούμε το πακέτο μπαταριών να φορτίζεται μία φορά ετησίως, ώστε να αποφεύγεται η υπερβολική αποφόρτισή του.

ΚΙΝ∆ΥΝΟΣ

Αν το πακέτο επαναφορτίσιμων μπαταριών δεν αντικατασταθεί με το σωστό τρόπο, υπάρχει κίνδυνος έκρηξης. Το πακέτο μπαταριών περιέχει μικρή ποσότητα επιβλαβών ουσιών. Για να αποφύγετε τυχόν τραυματισμό:

- Αντικαταστήστε τη μπαταρία μόνο με μπαταρία του προτεινόμενου από την IBM τύπου.
- Κρατήστε το πακέτο μπαταριών μακριά από φωτιά.
- Μην το εκθέσετε σε νερό ή βροχή.
- Μην επιχειρήσετε να το αποσυναρμολογήσετε.
- Μην το βραχυκυκλώσετε.
- Κρατήστε το μακριά από παιδιά.

Μην πετάτε το πακέτο μπαταριών σε απορρίμματα που καταλήγουν σε χωματερές ή χώρους υγειονομικής υφής απορριμμάτων. Η απόρριψη της μπαταρίας πρέπει να γίνεται σύμφωνα με τις τοπικές διατάξεις ή κανονισμούς και τις προδιαγραφές ασφάλειας της εταιρείας σας.
ΚΙΝΔΥΝΟΣ

Αν η εφεδρική μπαταρία δεν αντικατασταθεί με το σωστό τρόπο, υπάρχει κίνδυνος έκρηξης.

Η μπαταρία λιθίου περιέχει λίθιο και μπορεί να εκραγεί αν ο χειρισμός ή η απόρριψη της δεν γίνει με το σωστό τρόπο.

Αντικαταστήστε τη μόνο με μπαταρία του ίδιου τύπου.

Για να αποφεύγετε τυχόν τραυματισμό ή θάνατο, μην:

(1) την πετάξετε ή τη βυθίσετε σε νερό,
(2) την εκθέσετε σε θερμοκρασίες μεγαλύτερες των 100°C (212°F), ή (3) επιχειρήσετε να την επισκευάσετε ή να την αποσυναρμολογήσετε. Η απόρριψη της πρέπει να γίνεται σύμφωνα με τις τοπικές διατάξεις και τις προδιαγραφές ασφάλειας της εταιρείας σας.

ΚΙΝΔΥΝΟΣ

Κατά την εγκατάσταση ή ρύθμιση της επιλογής CDC ή Mini PCI, ακολουθήστε τις παρακάτω οδηγίες:

Για να αποφεύγετε τυχόν ηλεκτροπληξία, αποσυνδέστε όλα τα καλώδια και το μετασχητήρα εναλλασσόμενου ρεύματος όταν εγκαθιστάτε την επιλογή CDC ή Mini PCI ή ανοίγετε τα καλύμματα του συστήματος ή προσαρτημένων συσκευών. Το ηλεκτρικό ρεύμα στα καλώδια ρεύματος, τηλεφώνου και επικοινωνίας είναι επικίνδυνο.

ΠΡΟΣΟΧΗ:

Όταν έχετε προσθέσει ή αναβαθμίσει μια κάρτα CDC ή Mini PCI ή μια κάρτα μνήμης, μη χρησιμοποιήσετε τον υπολογιστή πριν κλείσετε το κάλυμμα. Ποτέ μη χρησιμοποιείτε τον υπολογιστή όταν το κάλυμμα είναι ανοιχτό.

ΠΡΟΣΟΧΗ:

Η λάμπα φθορισμού που περιέχεται στην οθόνη υγρών κρυστάλλων (LCD) περιέχει υδάργυρο. Μην την πετάτε σε απορρίμματα που καταλήγουν σε χοματερές ή χόρους υγειονομικής ταρής απορρυμάτων. Η απόρριψή της πρέπει να γίνεται σύμφωνα με τις τοπικές διατάξεις ή κανονισμούς.

Η οθόνη υγρών κρυστάλλων είναι κατασκευασμένη από γυαλί και υπάρχει κίνδυνος να σπάσει αν ο υπολογιστής χτυπηθεί ή πέσει κάτω. Αν το γυάλι εκτελέστε σε αυτήν έρθει σε επαφή με τα μάτια ή τα χέρια σας, πρέπει αμέσως να τα πλύνετε με νερό για τουλάχιστον 15 λεπτά. Αν παρατηρήσετε οποιαδήποτε συμπτώματα μετά την πλύση, ζητήστε ιατρική φροντίδα.
Δήλωση σχετικά με τις προδιαγραφές των συσκευών laser

Η οπτική μονάδα αποθήκευσης, π.χ. μονάδα CD-ROM, CD-RW, DVD-ROM ή SuperDisk, που μπορεί να είναι εγκατεστημένη στον υπολογιστή IBM ThinkPad είναι προϊόν laser. Η παρακάτω ετικέτα σήμανσης προϊόντος laser Κατηγορίας 1 βρίσκεται στην επιφάνεια της μονάδας:

CLASS 1 LASER PRODUCT
LASER KLASSE 1
LUOKAN 1 LASERLAITE
APPAREIL A LASER DE CLASSE 1
KLASS 1 LASER APPARAT

Η μονάδα είναι πιστοποιημένη από τον κατασκευαστή ως προϊόν που καλύπτει τις απαιτήσεις του Κώδικα Ομοσπονδιακών Κανονισμών 21 του Υπουργείου Υγείας και Ανθρωπίνων Υπηρεσιών των ΗΠΑ (DHHS 21 CFR) και συγκεκριμένα του Υποκεφαλικού J για προϊόντα laser Κατηγορίας 1.

Σε άλλες χώρες, η μονάδα είναι πιστοποιημένη ως προϊόν που καλύπτει τις απαιτήσεις των προτύπων IEC825 και EN60825 για προϊόντα laser Κατηγορίας 1.
ΚΙΝ∆ΥΝΟΣ

Μην ανοίξετε την οπτική μονάδα αποθήκευσης. Δεν υπάρχουν στο εσωτερικό της μονάδας εξαρτήματα που μπορούν να επικρατούν από το χρήστη ή ρυθμίσεις που μπορούν να γίνουν από το χρήστη.

Η διαφορετική από την περιγραφόμενη χρήση κομματιών και ρυθμιστών ή εκτέλεση διαδικασιών μπορεί να έχει ως αποτέλεσμα την έκθεση σε επικίνδυνη ακτινοβολία.

Τα προϊόντα laser Κατηγορίας 1 δεν θεωρούνται επικίνδυνα. Ο σχεδιασμός του συστήματος laser και της οπτικής μονάδας αποθήκευσης εξασφαλίζει τη μη έκθεση σε ακτινοβολία laser, πάνω από το επίπεδο της Κατηγορίας 1, σε συνθήκες συνήθους λειτουργίας, συντήρησης από το χρήστη ή παροχής υπηρεσιών.

Ορισμένες μονάδες περιέχουν ενσωματωμένη δίοδο laser Κατηγορίας 3Α. Σημειώνονται τα ακόλουθα:

ΚΙΝ∆ΥΝΟΣ

Εκτέλεστε ορατή και άσφαλτη ακτινοβολία laser όταν το κάλυμμα είναι ανοικτό. Αποφεύγετε την απευθείας έκθεση των ματιών στην ακτινοβολία. Μην κοιτάτε απευθείας στην κατεύθυνση της δέσμης και μην την εξετάζετε με οπτικά εργαλεία.

ΚΙΝ∆ΥΝΟΣ

Σημαντικό: Τα υλικά συσκευασίας σε ασφαλή χώρο μακριά από παιδιά για να αποφύγετε την έκθεση σε ακτινοβολία από πλαστικές σακούλες.

Πολλά προϊόντα και προαιρετικά τμήματα PC περιέχουν καλώδια ή σύρματα, π.χ. καλώδια ρεύματος ή καλώδια σύνδεσης του προαιρετικού τμήματος με το PC. Αν το προϊόν αυτό εχει τέτοια καλώδια ή σύρματα, ισχύει η οδηγία προειδοποίησης:

ΠΡΟΕΙΔΟΠΟΙΗΣΗ: Ο χειρισμός του καλωδίου αυτού του προϊόντος ή των καλωδίων του προαιρετικού τμήματος που πωλούνται με αυτό το προϊόν, θα σας εκθέσει σε μόλυβδο, χημική ουσία που η Πολιτεία της Καλιφόρνιας θεωρεί ότι προκαλεί καρκίνο και γενετήσια ελαττώματα ή άλλες αναπαραγωγικές βλάβες. Πλένετε τα χέρια σας μετά το χειρισμό των καλωδίων.

Φυλάξτε αυτές τις οδηγίες.
Important notice for users

Important regulatory notice for users

The ThinkPad R50 Series computer complies with the radio frequency and safety standards of any country or region in which it has been approved for wireless use. You are requested to install and use your ThinkPad computer in strict accordance with the local RF regulations. Before you use the ThinkPad R50 Series computer, please find and read Regulatory Notice for ThinkPad R50 Series, the notice that supplements this Service and Troubleshooting Guide. The notice is included in the package with this publication.

Information about hard disk capacity

Instead of providing a recovery CD or a Windows® CD with your computer, IBM provides simpler methods of accomplishing the tasks typically associated with these CDs. The files and programs for these alternative methods are on your hard disk, which eliminates having to locate misplaced CDs and problems associated with using an incorrect CD version.

The complete backup of all the files and programs that IBM preinstalled on your computer resides in a hidden section, or partition, of the hard disk. Although hidden, the backups in the partition consume hard disk space. Therefore, when checking the capacity of your hard disk according to Windows, you might note that the total capacity of the disk appears to be smaller than anticipated. This discrepancy is explained by the contents of the hidden partition. (See “Recovering pre-installed software” on page 31.)

For more information about recovering your hard disk to the original preinstalled contents, refer to your on-system help source, Access IBM. Press the blue Access IBM button or click the Access IBM icon on your desktop, and then browse the Learn section for various topics that cover backing up and recovering.
Finding information with Access IBM

The blue Access IBM button can help you in many situations when your computer is working normally, and even when it is not. At your desktop, press the Access IBM button to open Access IBM. Access IBM is your on-board computer help center that brings you informative illustrations and easy-to-follow instructions for getting started and staying productive. You can also use the Access IBM button to interrupt the startup sequence of your computer and start IBM Rescue and Recovery™. If Windows does not start correctly, press the Access IBM button during the startup sequence of your computer and start IBM Rescue and Recovery. Use this area to run diagnostics, restore your backups (assuming you have made backups using IBM Rescue and Recovery), restore to factory contents (ie, what was there when you received your computer), start a utility that enables you to change your startup sequence, and get essential system information, and start the IBM BIOS Setup Utility where you can check and change BIOS settings.

Press the Access IBM button to open the application that brings all of IBM’s resources to you. On the next page, you will see the Welcome page of Access IBM that explains what each part of Access IBM holds to help you.
Some of the topics in your help system contain brief video clips that show you how to perform certain tasks, such as replacing your battery, inserting a PC Card, or upgrading your memory. Use the controls shown to play, pause, and rewind the video clip.

Note: If a bootable device is attached to the computer, and the boot priority of that device is higher than IDE HDD, the computer boots from that device.
# Chapter 1. Overview of your new ThinkPad computer

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Your ThinkPad at a glance

Front view

- System-status indicators
- Access IBM button
- TrackPoint
- Computer display
- Power-status indicators
- External monitor connector
- Ultrabay Enhanced
- Touch pad

Rear view

- Power jack
- Parallel connector
- Ethernet connector
- Modem connector
- Video-out connector
- USB connector
Features

**Processor**
- Intel® Pentium® M Processor

**Memory**
- Double data rate II (DDRII) synchronous dynamic random access memory (DRAM)

**Storage device**
- 2.5-inch hard disk drive

**Display**
The color display uses TFT technology:
- Size: 14.1 inch or 15.0 inch, depending on the model
- Resolution:
  - LCD: 1024-by-768
  - External monitor: Up to 2048-by-1536
- Brightness control

**Keyboard**
- 87-key, 88-key, or 92-key
- UltraNav™ (TrackPoint® and touch pad)

  **Note:** Some models have the TrackPoint only, without a touch pad and its buttons.
- Fn key function
- Access IBM button
- Volume control buttons
- ThinkLight™

**External interface**
- Parallel connector (IEEE 1284A)
- External-monitor connector
- PC Card slot (Type II or Type III PC Card)
- Stereo headphone jack
- Microphone jack
- Video-out connector (S-Video) (on some models)
- 2 Universal Serial Bus (USB) connectors
- IEEE 1394 connector (on some models)
- Infrared port (on some models)
- RJ11 telephone connector
- RJ45 Ethernet connector
- Ultrabay™ Enhanced (on some models)
- Docking connector (on some models)
- Integrated wireless LAN feature (on some models)
Features

- Integrated Bluetooth feature (on some models)
Specifications

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<td><strong>Size</strong></td>
<td>Width: 314 mm (12.4 in.)</td>
<td>Width: 332 mm (13.1 in.)</td>
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<td></td>
<td>Depth: 260 mm (10.2 in.)</td>
<td>Depth: 269 mm (10.6 in.)</td>
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<td></td>
<td>Height: front 34 mm (1.35 in.), rear 37 mm (1.46 in.)</td>
<td>Height: front 37 mm (1.46 in.), rear 40 mm (1.58 in.)</td>
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**Environment**
- Maximum altitude without pressurization: 3048 m (10,000 ft)
- Temperature
  - At altitudes up to 2438 m (8000 ft)
    - Operating with no diskette: 5° to 35°C (41° to 95°F)
    - Operating with a diskette: 10° to 35°C (50° to 95°F)
    - Not operating: 5° to 43°C (41° to 110°F)
  - At altitudes above 2438 m (8000 ft)
    - Maximum operating temperature, 31.3°C (88°F)

**Note:** When you charge the battery pack, its temperature must be at least 10°C (50°F).
- Relative humidity:
  - Operating with no diskette in the drive: 8% to 90%
  - Operating with a diskette in the drive: 8% to 80%

**Heat output**
- 72 W (246 Btu/hr) maximum

**Power source (ac adapter)**
- Sine-wave input at 50 to 60 Hz
- Input rating of the ac adapter: 100-240 V ac, 50 to 60 Hz

**Battery pack**
- Lithium-ion (Li-Ion) battery pack
  - Nominal voltage: 10.8 V dc
  - Capacity: 4.4 AH
Caring for your ThinkPad computer

Caring for your ThinkPad computer

Though your computer is designed to function reliably in normal work environments, you need to use common sense in handling it. By following these important tips, you will get the most use and enjoyment out of your computer.

Important tips:

Be careful about where and how you work

- Do not leave the base of your computer in contact with your lap or any part of your body for an extended period when the computer is functioning or when the battery is charging. Your computer dissipates some heat during normal operation. This heat is a function of the level of system activity and battery charge level. Extended contact with your body, even through clothing, could cause discomfort or, eventually, a skin burn.
- Place liquids away from your computer to avoid spills, and keep your computer away from water (to avoid the danger of electrical shock).
- Store packing materials safely out of the reach of children to prevent the risk of suffocation from plastic bags.
- Keep your computer away from magnets, activated cellular phones, electrical appliances, or speakers (within 13 cm/5 in).
- Avoid subjecting your computer to extreme temperatures (below 5°C/41°F or above 35°C/95°F).

Be gentle with your computer

- Avoid placing any objects (including paper) between the display and the keyboard or under the keyboard.
- Do not drop, bump, scratch, twist, hit, vibrate, push or place heavy objects on your computer, display, or external devices.
- Your computer display is designed to be opened and used at an angle slightly greater than 90 degrees. Do not open the display beyond 180 degrees, as this might damage the computer hinge.

Carry your computer properly

- Before moving your computer, be sure to remove any media, turn off attached devices, and disconnect cords and cables.
- Be sure your computer is in standby or hibernation mode, or turned off, before moving it. This will prevent damage to the hard disk drive and data loss.
- When picking up your open computer, hold it by the bottom. Do not pick up or hold your computer by the display.
Caring for your ThinkPad computer

- Use a quality carrying case that provides adequate cushion and protection. Do not pack your computer in a tightly packed suitcase or bag.

Handle storage media and drives properly
- Avoid inserting diskettes at an angle and attaching multiple or loose diskette labels, as these can lodge in the drive.
- If your computer comes with an optical drive such as CD, DVD, or CD-RW/DVD drive, do not touch the surface of a disc or the lens on the tray.
- Wait until you hear the CD or DVD click into the center pivot of an optical drive such as CD, DVD, or CD-RW/DVD drive before closing the tray.
- When installing your hard disk, diskette, CD, DVD, or CD-RW/DVD drive, follow the instructions shipped with your hardware, and apply pressure only where needed on the device. See Access IBM, your on-board help system, for information on replacing your hard disk drive (open Access IBM by pressing the Access IBM button).

Take care in setting passwords
- Remember your passwords. If you forget a supervisor or hard disk password, IBM will not reset it, and you might have to replace your system board or hard disk drive.

Other important tips
- Your computer modem might use only an analog telephone network, or public-switched telephone network (PSTN). Do not connect the modem to a PBX (private branch exchange) or any other digital telephone extension line because this could damage your modem. Analog phone lines are often used in homes, while digital phone lines are often used in hotels or office buildings. If you are not sure which kind of phone line you are using, contact your telephone company.
- Your computer might have both an Ethernet connector and a modem connector. If so, be sure to connect your communication cable to the correct one, so your connector is not damaged. See Access IBM, your on-board help system, for information on the location of these connectors (press the Access IBM button to open Access IBM).
- Register your ThinkPad products with IBM (refer to the Web page: www.ibm.com/pc/register). This can help authorities return your computer to you if it is lost or stolen. Registering your computer also enables IBM to notify you about possible technical information and upgrades.
- Only an authorized IBM ThinkPad repair technician should disassemble and repair your computer.
- Do not modify or tape the latches to keep the display open or closed.
Caring for your ThinkPad computer

- Take care not to turn your computer over while the ac adapter is plugged in. This could break the adapter plug.
- Turn off your computer if you are replacing a device in a device bay, or else verify that the device is warm-or hot-swappable.
- If you exchange drives in your computer, reinstall the plastic bezel faces (if supplied).
- Store your external and removable hard disk, diskette, CD, DVD, and CD-RW/DVD drives in the appropriate containers or packaging when they are not being used.

Cleaning the cover of your computer

Occasionally clean your computer as follows:
1. Prepare a mixture of a gentle kitchen-use detergent (one that does not contain abrasive powder or strong chemicals such as acid or alkaline). Use 5 parts water to 1 part detergent.
2. Absorb the diluted detergent into a sponge.
3. Squeeze excess liquid from the sponge.
4. Wipe the cover with the sponge, using a circular motion and taking care not to let any excess liquid drip.
5. Wipe the surface to remove the detergent.
6. Rinse the sponge with clean running water.
7. Wipe the cover with the clean sponge.
8. Wipe the surface again with a dry, soft lint-free cloth.
9. Wait for the surface to dry completely and remove any fibers from the cloth.

Cleaning your computer keyboard

1. Absorb some isopropyl rubbing alcohol on a soft, dust-free cloth.
2. Wipe each keytop surface with the cloth. Wipe the keys one by one; if you wipe several keys at a time, the cloth may hook onto an adjacent key and possibly damage it. Make sure that no liquid drips onto or between the keys.
3. Allow to dry.
4. To remove any crumbs and dust from beneath the keys, you can use a camera blower with a brush or cool air from a hair drier.

Note: Avoid spraying cleaner directly on the display or the keyboard.

Cleaning your computer display
Caring for your ThinkPad computer

1. Gently wipe the display with a dry, soft lint-free cloth. If you see a scratchlike mark on your display, it might be a stain transferred from the keyboard or the TrackPoint pointing stick when the cover was pressed from the outside.
2. Wipe or dust the stain gently with a soft, dry cloth.
3. If the stain remains, moisten a soft, lint-free cloth with water or a 50-50 mixture of isopropyl alcohol and water that does not contain impurities.
4. Wring out as much of the liquid as you can.
5. Wipe the display again; do not let any liquid drip into the computer.
6. Be sure to dry the display before closing it.
Caring for your ThinkPad computer
# Chapter 2. Solving computer problems

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**Diagnosing problems**

If you have a problem with your computer, you can test it by using PC-Doctor® for Windows. To run PC-Doctor for Windows, do as follows:

1. Click **Start**.
2. Move the pointer to **All Programs** (in Windows other than Windows XP, **Programs**) and then to **PC-Doctor for Windows**.
3. Click **PC-Doctor**.
4. Choose one of the tests, from either **Device Categories** or **Test Scripts**.

**Attention**

Running any tests may take up to several minutes or longer. Make sure you have time to run the entire test; do not interrupt the test while it is running.

The **System Test** of the **Test Scripts** runs some tests of critical hardware components, but it does not run all of the diagnostic tests in PC-Doctor for Windows. If PC-Doctor for Windows reports that all of the tests in the **System Test** have been run and that it has found no problems, consider running more of the tests in PC-Doctor for Windows.

If you are preparing to contact IBM for support, be sure to print the test log so that you can rapidly provide information to the help technician.

**Troubleshooting**

If you do not find your problem here, refer to Access IBM, your on-board help system. Open Access IBM by pressing the Access IBM button. The following section only describes problems that might prevent you from accessing this help system.

**Error messages**

**Notes:**
1. In the charts, x can be any character.
2. The version of PC-Doctor referred to here is PC-Doctor for Windows.

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<thead>
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<th>Message</th>
<th>Solution</th>
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<tr>
<td>0175: Bad CRC1, stop POST task</td>
<td>The EEPROM checksum is not correct (block #6). Have the computer serviced.</td>
</tr>
<tr>
<td>0176: System Security - The System has been tampered with.</td>
<td>This message is displayed if you remove the Security Chip and reinstall it, or install a new one. To clear the error, enter the IBM BIOS Setup Utility. If this does not solve the problem, have the computer serviced.</td>
</tr>
</tbody>
</table>
# Solving computer problems

<table>
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<tr>
<th>Message</th>
<th>Solution</th>
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<tbody>
<tr>
<td>0177: Bad SVP data, stop POST task.</td>
<td>Checksum of the supervisor password in the EEPROM is not correct. The system board should be replaced. Have the computer serviced.</td>
</tr>
<tr>
<td>0182: Bad CRC2. Enter BIOS Setup and load Setup defaults.</td>
<td>Checksum of the CRC2 setting in the EEPROM is not correct. Go to IBM BIOS Setup Utility. Press F9 and then Enter to load the default setting. Press F10 and then Enter to restart the system.</td>
</tr>
<tr>
<td>0185: Bad startup sequence settings. Enter BIOS Setup and load Setup defaults.</td>
<td>Checksum of the startup sequence setting in the EEPROM is not correct. Go to IBM BIOS Setup Utility. Press F9 and then Enter to load the default setting. Press F10 and then Enter to restart the system.</td>
</tr>
<tr>
<td>0187: EAIA data access error</td>
<td>The access to EEPROM has failed. Have the computer serviced.</td>
</tr>
<tr>
<td>0188: Invalid RFID serialization information area</td>
<td>The EEPROM checksum is not correct (block # 0 and 1). The system board should be replaced, and the box serial number needs to be reinstalled. Have the computer serviced.</td>
</tr>
<tr>
<td>0189: Invalid RFID configuration information area</td>
<td>The EEPROM checksum is not correct (block # 4 and 5). The system board should be replaced, and the UUID needs to be reinstalled. Have the computer serviced.</td>
</tr>
<tr>
<td>0190: Critical low-battery error</td>
<td>The computer turned off because the battery is low. Connect the ac adapter to the computer and charge the battery, or replace the battery with a fully charged one.</td>
</tr>
<tr>
<td>0191: System Security - Invalid remote change requested.</td>
<td>The system configuration change has failed. Confirm the operation and try again. To clear the error, enter the IBM BIOS Setup Utility.</td>
</tr>
<tr>
<td>0192: System Security - IBM Embedded Security hardware tamper detected.</td>
<td>The Security Chip has been replaced with a different one. Have the computer serviced.</td>
</tr>
<tr>
<td>0199: System Security - IBM Security password retry count exceeded.</td>
<td>This message is displayed if you enter a wrong supervisor password more than three times. Confirm the supervisor password and try again. To clear the error, enter the IBM BIOS Setup Utility.</td>
</tr>
<tr>
<td>01C8: More than one modem devices are found. Remove one of them. Press &lt;Esc&gt; to continue.</td>
<td>Remove a Modem Mini-PCI Card. Otherwise, press Esc to ignore the warning message. If it does not solve this problem, have the computer serviced.</td>
</tr>
<tr>
<td>01C9: More than one Ethernet devices are found. Remove one of them. Press &lt;Esc&gt; to continue.</td>
<td>Your ThinkPad computer has a built-in Ethernet feature, and you cannot add another such feature by installing an Ethernet device. If this error message is displayed, remove the Ethernet device that you installed. Otherwise, press Esc to ignore the warning message. If this does not solve the problem, have the computer serviced.</td>
</tr>
</tbody>
</table>
### Solving computer problems

<table>
<thead>
<tr>
<th>Message</th>
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</thead>
<tbody>
<tr>
<td>0200: Hard disk error</td>
<td>The hard disk is not working. Make sure that the hard disk drive is attached firmly. Run the IBM BIOS Setup Utility; then make sure the hard disk drive is not disabled in the Startup menu.</td>
</tr>
</tbody>
</table>
| 021x: Keyboard error | Make sure that there are no objects placed on the keyboard, or if you have one, the external keyboard. Turn off the computer, and turn off all attached devices. Turn on the computer first; then turn on the attached devices. If you still see the same error code, do the following:  
  - If an external keyboard is connected, do the following:  
    - Turn off the computer and disconnect the external keyboard; then turn on the computer. Make sure that the built-in keyboard operates correctly. If it does, have the external keyboard serviced.  
    - Make sure that the external keyboard is connected to the correct connector.  
  - Test the computer by using PC-Doctor.  
  - If the computer stops during the test, have the computer serviced. |
| 0230: Shadow RAM error | The shadow RAM failed. Test your computer’s memory with PC-Doctor. If you added a memory module just before turning the computer on, reinstall it. Then test the memory with PC-Doctor. |
| 0231: System RAM error | The system RAM failed. Test your computer’s memory with PC-Doctor. If you added a memory module just before turning the computer on, reinstall it. Then test the memory with PC-Doctor. |
| 0232: Extended RAM error | The extended RAM failed. Test your computer’s memory with PC-Doctor. If you have increased memory just before turning the computer on, reinstall it. Then test the memory with PC-Doctor. |
| 0250: System battery error | The backup battery, which is used to preserve the configuration information, such as the date and time, while the computer is turned off, is depleted. Replace the battery and run IBM BIOS Setup Utility to verify the configuration. If you still have a problem, have the computer serviced. |
| 0251: System CMOS checksum bad | The system CMOS might have been corrupted by an application program. The computer uses the default settings. Run IBM BIOS Setup Utility to reconfigure the settings. If you still see the same error code, have the computer serviced. |
| 0260: System timer error | Have the computer serviced. |
| 0270: Real time clock error | Have the computer serviced. |
| 0271: Date and time error | Neither the date nor the time is set in the computer. Set the date and time, using the IBM BIOS Setup Utility. |
### Solving computer problems

<table>
<thead>
<tr>
<th>Message</th>
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<tbody>
<tr>
<td>0280: Previous boot incomplete</td>
<td>Your computer was previously unable to complete the boot process. Turn the computer off; then turn it on to start the IBM BIOS Setup Utility. Verify the configuration and then restart the computer either by choosing the <strong>Exit Saving Changes</strong> option under the <strong>Restart</strong> item or by pressing F10. If you still see the same error code, have the computer serviced.</td>
</tr>
<tr>
<td>02D0: System cache error</td>
<td>The cache is disabled. Have the computer serviced.</td>
</tr>
<tr>
<td>02F4: EISA CMOS not writable</td>
<td>Have the computer serviced.</td>
</tr>
<tr>
<td>02F5: DMA test failed</td>
<td>Have the computer serviced.</td>
</tr>
<tr>
<td>02F6: Software NMI failed</td>
<td>Have the computer serviced.</td>
</tr>
<tr>
<td>02F7: Fail-safe timer NMI failed</td>
<td>Have the computer serviced.</td>
</tr>
<tr>
<td>1802: Unauthorized network card is plugged in - Power off and remove the miniPCI network card.</td>
<td>The Mini-PCI network card is not supported on this computer. Remove it.</td>
</tr>
<tr>
<td>1803: Unauthorized daughter card is plugged in - Power off and remove the daughter card.</td>
<td>The daughter card is not supported on this computer. Remove it.</td>
</tr>
</tbody>
</table>
Solving computer problems

<table>
<thead>
<tr>
<th>Message</th>
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</table>
| 1810: Hard disk partition layout error | A problem in recognizing the layout of the partition on the hard disk has halted computer startup. Either the IBM Predesktop Area has been deleted, or the hard disk contains corrupt data. To try to restart your computer, complete one of the following:  
  • If the IBM Predesktop Area has been deleted  
    1. Press F1 to open the IBM BIOS Setup Utility.  
    3. Set this item to Disabled.  
    4. Save and exit.  
  If the above fails  
    1. Press Enter.  
    2. Double-click RECOVER TO FACTORY CONTENTS and follow on-screen instructions.  
      Note: This will permanently erase the entire contents of the hard disk, and then restore software preinstalled by IBM.  
    • Press F1 to open IBM BIOS Setup Utility, or Enter to start the IBM Predesktop Area.  
  If the computer still does not start, call the IBM Support Center. Telephone numbers are listed in "Calling IBM" on page 38. |
| The power-on password prompt | A power-on password or a supervisor password is set. Type the password and press Enter to use the computer. If the power-on password is not accepted, a supervisor password might have been set. Type the supervisor password and press Enter. If you still see the same error message, have the computer serviced. |
| The hard disk password prompt | A hard disk password is set. Type the password and press Enter to use the computer.  
  If you still see the same error message, have the computer serviced. |
| Hibernation error | The system configuration changed between the time your computer entered hibernation mode and the time it left this mode, and your computer cannot resume normal operation.  
  • Restore the system configuration to what it was before your computer entered hibernation mode.  
  • If the memory size has been changed, re-create the hibernation file. |
| Operating system not found. | Verify the following:  
  • The hard disk drive is correctly installed.  
  • A startable diskette is in the diskette drive  
  If you still see the same error message, check the boot sequence, using the IBM BIOS Setup Utility. |
| Fan error | The cooling fan has failed. Have the computer serviced. |
### Solving computer problems

<table>
<thead>
<tr>
<th>Message</th>
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</thead>
<tbody>
<tr>
<td>EMM386 Not Installed - Unable to Set Page Frame Base Address.</td>
<td>Edit C:\CONFIG.SYS and change a line from <code>device=C:\WINDOWS\EMM386.EXE RAM</code> to <code>device=C:\WINDOWS\EMM386.EXE NOEMS</code> and save this file.</td>
</tr>
<tr>
<td>CardBus Configuration Error - Device Disabled</td>
<td>Go to IBM BIOS Setup Utility. Press F9 and then Enter to load the default setting. Press F10 and then Enter to restart the system.</td>
</tr>
<tr>
<td>Thermal sensing error</td>
<td>The thermal sensor is not functioning correctly. Have the computer serviced.</td>
</tr>
<tr>
<td>Authentification of system services failed. Press &lt;Esc&gt; to resume.</td>
<td>The IBM Predesktop Area in the HDD is broken. To use the IBM Predesktop Area, get a Recovery CD, and recover the IBM Predesktop Area.</td>
</tr>
</tbody>
</table>

### Errors without messages

**Problem:**
When I turn on the machine, nothing appears on the screen and the machine does not beep while starting up.

**Note:** If you are not sure whether you heard any beeps, turn off the computer; then turn it on again, and listen again. If you are using an external monitor, refer to “Computer screen problems” on page 24.

**Solution:**
If a power-on password is set, press any key to display the power-on password prompt, and then type the correct password and press Enter.

If the power-on password prompt does not appear, the brightness level might be set to minimum brightness. Adjust the brightness level by pressing Fn+Home.

If the screen still remains blank, make sure that:

- The battery is installed correctly.
- The ac adapter is connected to the computer and the power cord is plugged into a working electrical outlet.
- The computer power is on. (Turn on the power switch again for confirmation.)

If these items are properly set, and the screen remains blank, have the computer serviced.
Solving computer problems

Problem:
When I turn on the machine, nothing appears on the screen, but I hear two or more beeps.

Solution:
Make sure that the memory card is installed correctly. If it is, but the screen is still blank, and you hear five beeps, have the computer serviced.

If you hear 4 cycles of 4 beeps each, the Security Chip has a problem. Have the computer serviced.

Problem:
When I turn on the machine, only a white pointer appears on a blank screen.

Solution:
Reinstall your operating system, and turn on the computer. If you still see only the pointer on the screen, have the computer serviced.

Problem:
My screen goes blank while the computer is on.

Solution
Your screen saver or power management may be enabled. Do one of the following to exit from the screen saver or to resume from standby or hibernation mode:
• Touch the TrackPoint or the touch pad.
• Press a key.
• Press the power switch

Problem:
The DOS full-screen looks smaller.

Solution:
If you use a DOS application that supports only 640×480 resolution (VGA mode), the screen image might look slightly distorted or appear smaller than the display size. This is to maintain compatibility with other DOS applications. To expand the screen image to the same size as the actual screen, start the ThinkPad Configuration Program and click LCD; then select the Screen expansion function. (The image might still look slightly distorted.)

A password problem

Problem:
I forgot my password.

Solution:
If you forgot your power-on password, you must take your computer to an IBM authorized servicer or marketing representative to have the password canceled.
If you forgot your hard disk password, IBM will not reset your password or recover data from the hard disk. You must take your computer to an IBM authorized servicer or an IBM marketing representative to have the hard disk drive replaced. Proof of purchase is required, and a fee will be charged for parts and service.

If you forgot your supervisor password, IBM will not reset your password. You must take your computer to an IBM authorized servicer or IBM marketing representative to have the system board replaced. Proof of purchase is required, and a fee will be charged for parts and service.

**A power switch problem**

**Problem:**
The system does not respond, and you cannot turn off the computer.

**Solution:**
Turn off the computer by pressing and holding the power switch for 4 seconds or more. If the computer is still not reset, remove the ac adapter and the battery.

**Keyboard problems**

**Problem:**
All or some of the keys on the keyboard do not work.

**Solution:**
If the problem occurred immediately after the computer returned from standby mode, enter the power-on password if one has been set.

If an external PS/2® keyboard is connected, the numeric keypad on your computer does not work. Use the numeric keypad on the external keyboard.

If an external numeric keypad or a mouse is connected:
1. Turn off the computer.
2. Remove the external numeric keypad or the mouse.
3. Turn on the computer and try using the keyboard again.

If the keyboard problem is resolved, carefully reconnect the external numeric keypad, external keyboard, or mouse, making sure that you have seated the connectors properly.

If keys on the keyboard still do not work, have the computer serviced.

**Problem:**
A number appears when you type a letter.

**Solution**
The numeric lock function is on. To disable it, press and hold Shift; then press NumLk.
Solving computer problems

Problem:
All or some of the keys on the external numeric keypad do not work.

Solution:
Make sure that the external numeric keypad is correctly connected to the computer.

Problem
Some or all of the keys on the external PS/2 keyboard do not work.

Solution
If you are using the ThinkPad Dock II, the ThinkPad Mini Dock, or the ThinkPad Port Replicator II, make sure that the keyboard cable is correctly connected to the keyboard connector.

If the connection is correct, disconnect the cable and make sure that the built-in keyboard operates properly. If the built-in keyboard works, there is a problem with the external keyboard. Try using a different external keyboard.

UltraNav problems

Problem:
The pointer drifts when the computer is turned on or after it resumes normal operation.

Solution:
The pointer might drift when you are not using the TrackPoint during normal operation. This is a normal characteristic of the TrackPoint and is not a defect. Pointer drifting might occur for several seconds under the following conditions:
• When the computer is turned on.
• When the computer resumes normal operation.
• When the TrackPoint is pressed for a long time.
• When the temperature changes.

Problem:
The mouse or the pointing device does not work.

Solution:
Make sure that the TrackPoint is enabled in the ThinkPad Configuration Program, and then try using the TrackPoint. If the TrackPoint works, the error might be due to the mouse.

Make sure that the mouse or pointing-device cable is securely connected to the ThinkPad Dock II, the ThinkPad Mini Dock, or the ThinkPad Port Replicator II.

If your mouse is incompatible with the IBM PS/2 mouse, disable the TrackPoint, using the ThinkPad Configuration Program.
Note: For more information, see the manual supplied with the mouse.

Problem:
The mouse buttons do not work.

Solution:
If your ThinkPad computer has the TrackPoint only, this problem may occur.

Change the mouse driver to Standard PS/2® Port Mouse, and then reinstall IBM PS/2 TrackPoint. Drivers are provided in the C:\IBMT0OLS\DRIVERS directory on your hard disk drive. If your hard disk drive does not contain device drivers, refer to the ThinkPad Web site. To access to this Web site, press the Access IBM button and open Access IBM.

Standby or hibernation problems

Problem:
The computer enters standby mode unexpectedly.

Solution:
If the processor overheats, the computer automatically enters standby mode to allow the computer to cool and to protect the processor and other internal components. Also, check the settings for standby mode, using Power Manager.

Problem:
The computer enters standby mode immediately after Power-on self-test (POST) (the standby indicator light turns on).

Solution:
Make sure that:
• The battery is charged.
• The operating temperature is within the acceptable range. Refer to “Specifications” on page 5.

If these items are correct, have the computer serviced.

Problem:
The critical low-battery error message is displayed, and the computer immediately turns off.

Solution:
The battery power is getting low. Connect the ac adapter to the computer, or replace the battery with a fully charged one.

Problem:
When you take action to return from standby mode, the computer display remains blank.
Solving computer problems

Solution:
Check whether an external monitor was disconnected while the computer was in standby mode. Do not disconnect the external monitor while the computer is in standby mode or hibernation mode. If no external monitor is attached when the computer resumes, the computer display remains blank and output is not displayed. This restriction does not depend on the resolution value. Press Fn+F7 to bring up the computer display.

Note: If you use the Fn+F7 key combination to apply a presentation scheme, press Fn+F7 at least three times in three seconds, and the image is displayed on the computer screen.

Problem:
The computer does not return from standby mode, or the standby indicator stays on and the computer does not work.

Solution:
If the system does not return from standby mode, it may have entered standby or hibernation mode automatically because the battery is depleted. Check the standby indicator.
• If the standby indicator is on, your computer is in standby mode.
  Connect the ac adapter to the computer; then press Fn.
• If the standby indicator is off, your computer is in hibernation mode or power-off state. Connect the ac adapter to the computer; then press power button to resume operation.

If the system still does not return from standby mode, your system may stop responding and you cannot turn off the computer. In this case, you need to reset the computer. If you have not saved your data, it may be lost. To reset the computer, press and hold the power button for 4 seconds or more. If the system is still not reset, remove the ac adapter and the battery.

Problem:
Your computer does not enter standby or hibernation mode.

Solution:
Check whether any option has been selected that would disable your computer from entering standby or hibernation mode.

Problem:
The system does not wake up at the time set on the timer, if the computer is not connected to an ac power source,

–or–

The system does not enter hibernation mode from suspend mode if the computer is not connected to an ac power source.
Solution:
The timer-wake-with-battery-operation is disabled by default. If you enable this function, the computer could wake up and begin running while it is being carried; this could lead to damage to the hard disk drive.

With this risk in mind, you can enable the timer-wake-with-battery-operation.

1. Turn your computer off and then on again; then, while the message, “To interrupt normal startup, press the blue Access IBM button” is displayed at the lower left of the screen, press the Access IBM button. IBM Rescue and Recovery screen opens.
2. Click Access BIOS. The System Restart Required window is displayed.
3. Click Yes. The computer restarts, and the IBM BIOS Setup Utility menu appears.
4. With the cursor key, select **Config**; then press Enter. The **Power** submenu is displayed.
5. Select **Timer Wake with Battery Operation** by pressing Enter.
6. With the F5 or F6 key, select **Enabled**; then press Enter.
7. Press F10 and Enter to save this setting and exit this utility.

For information about the BIOS Setup Utility, see “IBM BIOS Setup Utility” in Access IBM, your on-board help system.

Problem:
The Fn+F12 key combination does not make the computer enter hibernation mode.

Solution:
The computer cannot enter hibernation mode:

- If you are using one of the IBM communication PC Cards. To enter hibernation mode, stop the communication program, and then remove the PC Card or disable the PC Card slot. Click the **Safely Remove Hardware** icon in the taskbar (for Windows XP) or the **Unplug or Eject Hardware** icon in the taskbar (for Windows 2000).
- If the hibernation mode is not enabled. To enable it, do as follows:
  1. Start the ThinkPad Configuration Program.
  2. Click **Power Management**.
  3. Click the **Hibernate** tab.
  4. Select the hibernate support checkbox.
  5. Click OK.

**Note:** If you want to be able to enter hibernation mode by pressing Fn+F12, you need to install IBM PM driver.
Solving computer problems

Problem:
Under Windows XP, the Fn+F3 key combination does not make the computer screen go blank.

Solution:
Windows XP enables multiple users to log on to the system at the same time. If you are the first user to have logged on to your computer, you can use the Fn+F3 key combination. Otherwise the combination will not work on your computer.

Computer screen problems

Problem:
The screen is blank.

Solution:
• Press Fn+F7 to bring up the image.

  Note: If you use the Fn+F7 key combination to apply a presentation scheme, press Fn+F7 at least three times in three seconds, and the image is displayed on the computer screen.

• If you are using the AC adapter, or using the battery, and the battery status indicator is on (is green), press Fn+Home to make the screen brighter.

• If the standby status indicator is on (is green), press Fn to resume from the standby mode.

• If the problem persists, do the Solution in the problem below.

Problem:
The screen is unreadable or distorted.

Solution:
Make sure that:
• The display device driver is installed correctly.
• The screen resolution and color quality are correctly set.
• The monitor type is correct.

To check these settings, do as follows:
Open the Display Properties window.
1. Click the Settings tab.
2. Check whether the screen resolution and color quality are correctly set.
3. Click Advanced.
4. Click the Adapter tab.
5. Make sure that “ATI Mobility RADEON xxxxx” or “Intel xxxxx” is shown in the adapter information window.
6. Click the Properties button. Check the “Device status” box and make sure the device is working properly. If not, click the Troubleshooter button.
7. Click the **Monitor** tab.
8. Make sure the information is correct.
9. Click the **Properties** button. Check the "Device status" box and make sure the device is working properly. If not, click the **Troubleshooter** button.

**Problem:**
The screen stays on even after you turn off your computer.

**Solution:**
Press and hold the power switch for 4 seconds or more to turn off your computer; then turn it on again.

**Problem:**
Missing, discolored, or bright dots appear on the screen every time you turn on your computer.

**Solution:**
This is an intrinsic characteristic of the TFT technology. Your computer’s display contains multiple thin-film transistors (TFTs). A small number of missing, discolored, or bright dots on the screen might exist all the time.

**Battery problems**

**Problem:**
The battery cannot be fully charged by the power-off method in the standard charge time for your computer.

**Solution:**
The battery might be over-discharged. Do the following:
1. Turn off the computer.
2. Make sure that the over-discharged battery is in the computer.
3. Connect the ac adapter to the computer and let it charge.

If the optional Quick Charger is available, use it to charge the over-discharged battery.

If the battery cannot be fully charged in 24 hours, use a new battery.

**Problem:**
Your computer shuts down before the battery status indicator shows empty.

or
Your computer operates after the battery status indicator shows empty.

**Solution:**
Discharge and recharge the battery.

**Problem:**
The operating time for a fully charged battery is short.
Solving computer problems

Solution:
Discharge and recharge the battery. If your battery’s operating time is still short, use a new battery.

Problem:
The computer does not operate with a fully charged battery.

Solution:
The surge protector in the battery might be active. Turn off the computer for one minute to reset the protector; then turn on the computer again.

Problem
The battery does not charge.

Solution
You cannot charge the battery when it is too hot. If the battery feels hot, remove it from the computer and allow it to cool to room temperature. After it cools, reinstall it and recharge the battery. If it still cannot be charged, have it serviced.

Hard disk drive problems

Problem:
The hard disk drive makes a rattling noise intermittently.

Solution:
The rattling noise might be heard when:
• The hard disk drive starts accessing the data or when it stops.
• You are carrying the hard disk drive.
• You are carrying your computer.

This is a normal characteristic of a hard disk drive and is not a defect.

Problem:
The hard disk drive does not work.

Solution:
In the startup menu in the IBM BIOS Setup Utility, make sure that the hard disk drive is included in the “Boot priority order” list. If it is included in the “Excluded from boot order” list, it is disabled. Select the entry for it in the list and press the x key. This moves the entry to the “Boot priority order” list.

A startup problem

Problem:
The Microsoft® Windows operating system will not start.

Solution:
Use the IBM Rescue and Recovery workspace to help solve or identify your problem. Starting the IBM Rescue and Recovery workspace is easy. To open IBM Rescue and Recovery, do the following:
1. Turn off your PC, and then turn it back on again.

2. Watch the screen carefully while your PC starts. When the “To interrupt normal startup, press the blue Access IBM button.” message is displayed at the lower left of the screen, press the blue Access IBM button. IBM Rescue and Recovery workspace opens. A window such as this will appear:
3. After the Rescue and Recovery workspace opens, you can do the following:
   • **Rescue and Restore** Your files, folders, or backups using IBM Rapid Restore Ultra.
   • **Configure** Your system settings and passwords.
   • **Communicate** Use the internet and link to the IBM support site.
   • **Troubleshoot** Diagnose problems using diagnostics.

In the top panel of the Rescue and Recovery workspace, you can click the following to open other pages or exit the utility:

- **Events Log** enables you to view a log that contains information about events, or tasks, associated with Rescue and Recovery operations.
- **System Information** enables you to see key hardware and software information about your computer. This information might be valuable when trying to diagnose problems.
- **Warranty Status** enables you to see when your warranty expires, the terms if service for your computer, or list of replacement parts.
- **Help** provides information about the various pages in Rescue and Recovery workspace.
- **Restart** closes the Rescue and Recovery workspace and resumes the startup sequence that was interrupted.

**Other problems**

**Problem:**
The computer locks or does not accept any input.

**Solution:**
Your computer might lock when it enters standby mode during a communication operation. Disable the standby timer when you are working on the network.

To turn off the computer, press and hold the power switch for 4 seconds or more.

**Problem:**
The computer does not start from a device you want, such as a diskette drive.

**Solution:**
Refer to the Startup menu of the IBM BIOS Setup Utility. Make sure that the startup sequence in the IBM BIOS Setup Utility is set so that the computer starts from the device you want.

Also make sure that the device from which the computer starts is enabled. In the startup menu in the IBM BIOS Setup Utility, make sure that the
device is included in the "Boot priority order" list. If it is included in the "Excluded from boot order" list, it is disabled. Select the entry for it in the list and press the x key. This moves the entry to the "Boot priority order" list.

**Problem:**
The computer does not respond.

**Solution:**
IRQs for the PCI are all set as 11. The computer does not respond because it cannot share the IRQ with other devices. Refer to the ThinkPad Configuration Program.

**Problem:**
The computer can not play a CD, or the sound quality is not good.

**Solution:**
Be sure that the disk meets the standards for your country. Usually, a disk that meets the local standards is marked with a CD logo on the label. If you use a disc that does not meet these standards, we cannot guarantee that it will play, or that, if it does play, the sound quality will be good.

**Problem:**
Playback of DVD is not smooth in Windows 2000.

**Solution:**
If you select the Maximum Battery mode for the Intel SpeedStep® technology, this problem may occur. This mode is designed to achieve maximum battery life by switching the processor speed between the regular low speed and half of that speed, depending on how much the processor is used. If the use increases, Intel SpeedStep switches the processor speed to the lower speed. Operation in this mode can severely degrade the performance of the processor, and thus cause the playback of a DVD to be jerky.

To avoid or reduce this problem, you can choose any of three other modes of operation, as follows:

- **Maximum Performance:** Keeps the processor speed high at all times.
- **Automatic:** Switches the processor speed between high and low, depending on how much the processor is used. If the use increases, Intel SpeedStep switches the processor speed to high.
- **Battery Optimized Performance:** Keeps the processor speed low at all times.

To choose a mode, do the following:
Solving computer problems

1. Start the ThinkPad Configuration Program.
2. Click Power Management.
3. Click the Intel SpeedStep technology tab.
4. From the list, select the mode you want.
5. Click OK.

Problem:
You cannot connect using the built-in wireless networking card.

Solution:
If the computer display is closed, open it and try again.

Problem:
If your operating system is Windows 2000 and you are using a USB 1.x device, then when your computer returns from standby or hibernation mode to normal operation, the "Unsafe Removal of Device" message may appear.

Solution:
You can safely close this message. It is displayed because of the USB 2.0 driver problem on Windows 2000. You can get detailed information in the More Information section of the Microsoft Knowledge Base 328580 and 323754. Visit the Microsoft Knowledge Base homepage at http://support.microsoft.com/, type the number of the knowledge base article you need in the search field, and click the Search button.

Starting IBM BIOS Setup Utility

Your computer provides a program, called IBM BIOS Setup Utility, that enables you to select various setup parameters.

- Config: Set the configuration of your computer.
- Date/Time: Set the date and time.
- Security: Set security features.
- Startup: Set the startup device.
- Restart: Restart the system.

Note: You can set many of these parameters more easily by using the ThinkPad Configuration Program.

To start IBM BIOS Setup Utility, do as follows:
1. To protect yourself against accidental loss of data, back up your data and computer registry. For details, refer to the on-board help.
2. Remove any diskette from the diskette drive, and then turn off the computer.
Starting IBM BIOS Setup Utility

3. Turn on the computer; then, while the message, “To interrupt normal startup, press the blue Access IBM button” is displayed at the lower left of the screen, press the Access IBM button. IBM Rescue and Recovery workspace opens.

4. Click Access BIOS. The System Restart Required window is displayed.

5. Click Yes. The computer restarts, and the IBM BIOS Setup Utility menu appears.
   
   If you have set a supervisor password, the IBM BIOS Setup Utility menu appears after you enter the password. You can start the utility by pressing Enter instead of entering the supervisor password; however, you cannot change the parameters that are protected by the supervisor password. For more information, refer to the on-board help.

6. Using the cursor keys, move to an item you want to change. When the item you want is highlighted, press Enter. A submenu is displayed.

7. Change the items you wish to change. To change the value of an item, use the F5 or F6 key. If the item has a submenu, you can display it by pressing Enter.

8. Press F3 or Esc to exit from the submenu. If you are in a nested submenu, press Esc repeatedly until you reach the IBM BIOS Setup Utility menu.
   
   Note: If you need to restore the settings to their original state as of the time of purchase, press F9 key to load the default settings. You can also select an option in the Restart submenu to load the default settings or discard the changes.

9. Select Restart; then press Enter. Move the cursor to the option you want for restarting your computer; then press Enter. Your computer restarts.

---

Recovering pre-installed software

Your computer hard disk has a hidden, protected area for backups. Contained within this area is a complete backup of the hard disk as it was shipped from the factory and a program called the IBM Rescue and Recovery.

If you performed a backup operation using the Rescue and Recovery program, you also have one or more backups stored that reflect the contents of the hard disk, as it existed at various points in time. These backups might be stored on your hard disk, or a network drive, or on removable media, depending on the options you selected during the backup operation.

You can use either the Rescue and Recovery program or the IBM Rescue and Recovery workspace to restore the contents of the hard disk to an earlier state using any of the stored backups. The IBM Rescue and Recovery workspace runs independently of the Windows operating system. Therefore, you can start it by pressing the blue Access IBM button when prompted during startup.
Recovering pre-installed software

After the Rescue and Recovery workspace opens you can perform a recovery operation, even if you are unable to start Windows. For more information about using Rescue and Recovery features, see “Data backup-and-restore tools” or “Introducing Rescue and Recovery” in Access IBM.

To recover the hard disk to its original contents, do the following:

Notes:
1. If the optical drive is not installed in your ThinkPad computer during recovery, DVD software and CD-recording software will not be installed. To ensure that they will be installed correctly, install the optical drive in the Ultrabay Enhanced before performing a recovery operation.
2. The recovery process might take up to 2 hours.

Attention: All of the files on the primary hard disk partition (usually drive C) will be lost in the recovery process. However, before any data is overwritten, you will be given the opportunity to save one or more files to other media.
1. If possible, save all your files and shut down your operating system.
2. Turn off your computer for at least 5 seconds.
3. Turn on your computer. Watch the display carefully. While the message, “To interrupt normal startup, press the blue Access IBM button” is displayed at the lower left of the screen, press the Access IBM button. The IBM Rescue and Recovery workspace opens.
4. Click Restore your system.
5. Click Restore my hard drive to the original factory state and then click Next.
6. Follow the instructions on the screen.
7. When the recovery process finishes, press Enter key. Your computer will restart with the pre-installed operating system, drivers, and software.

Upgrading the hard disk drive

You can increase the storage capacity of your computer by replacing the hard disk drive with one of greater capacity. You can purchase a new hard disk drive from your IBM authorized servicer or IBM marketing representative.

Note: Replace the hard disk drive only if you upgrade it or have it repaired. The connectors and bay of the hard disk drive were not designed for frequent changes, or drive swapping. The Rescue and Recovery workspace and the Product Recovery program is not contained in the optional hard disk drive.
Upgrading the hard disk drive

Attention

Handling a hard disk drive

- Do not drop the drive or subject it to physical shocks. Put the drive on a material, such as soft cloth, that absorbs the physical shock.
- Do not apply pressure to the cover of the drive.
- Do not touch the connector.

The drive is very sensitive. Incorrect handling can cause damage and permanent loss of data on the hard disk. Before removing the hard disk drive, make a backup copy of all the information on the hard disk, and then turn the computer off. Never remove the drive while the system is operating, in standby mode, or in hibernation mode.

To replace the hard disk drive, do the following:

1. **Turn off the computer;** then disconnect the ac adapter and all cables from the computer.
2. Close the computer display, and turn the computer over.
3. Remove the battery.
4. Remove the screw that secures the hard disk drive.
5. Open the computer display; then stand the computer on its side and remove the hard disk drive by pulling the cover away from the
Upgrading the hard disk drive

6. Detach the cover from the hard disk drive.

7. Attach the cover to a new hard disk drive.

8. Insert the hard disk drive and its cover into the hard disk drive bay; then firmly install them.

9. Close the computer display and place the computer with its bottom side up. Reinstall the screw.

10. Reinstall the battery.
11. Turn the computer over again. Connect the ac adapter and the cables to the computer.

**Replacing the battery**

1. **Turn off the computer, or enter hibernation mode.** Then disconnect the ac adapter and all cables from the computer.

   _Note:_ If you are using a PC Card, the computer might not be able to enter hibernation mode. If this happens, turn off the computer.

2. Close the computer display, and turn the computer over.
3. Slide and hold the battery latch to the unlocked position 1, and remove the battery 2.

4. Install a fully charged battery.
Replacing the battery

5. Slide the battery latch to the locked position.

6. Turn the computer over again. Connect the ac adapter and the cables to the computer.
Chapter 3. Getting help and service from IBM

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Getting help and service

If you need help, service, technical assistance, or just want more information about IBM products, you will find a wide variety of sources available from IBM to assist you. This section contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your computer, and whom to call for service should it be necessary.

Microsoft Service Packs are the latest software source for Windows product updates. They are available via Web download (connection charges may apply) or via CD-ROM. For more specific information and links, please go to www.microsoft.com. IBM offers Up and Running technical assistance with installation of, or questions related to, Service Packs for your IBM preloaded Microsoft Windows product. For information please contact the IBM Support Center at the phone number(s) listed in "Worldwide telephone list" on page 68.

Getting help on the Web

On the World Wide Web, the IBM Web site has up-to-date information about IBM Personal Computer products and support. The address for the IBM Personal Computing home page is www.ibm.com/pc

IBM provides an extensive Web site dedicated to mobile computing and to ThinkPad computers at www.ibm.com/pc/support. Research this Web site to learn how to solve problems, find new ways to use your computer, and learn about options that can make working with your ThinkPad computer even easier.

Calling IBM

If you have tried to correct the problem yourself and still need help, during the warranty period, you can get help and information by telephone through the IBM Support Center. The following services are available during the warranty period:

- Problem determination - Trained personnel are available to assist you with determining if you have a hardware problem and deciding what action is necessary to fix the problem.
- IBM hardware repair - If the problem is determined to be caused by IBM hardware under warranty, trained service personnel are available to provide the applicable level of service.
- Engineering change management - Occasionally, there might be changes that are required after a product has been sold. IBM or your reseller, if authorized by IBM, will make selected Engineering Changes (ECs) available that apply to your hardware.
The following items are not covered:
• Replacement or use of non-IBM parts or nonwarranted IBM parts

   **Note:** All warranted parts contain a 7-character identification in the format IBM FRU XXXXXX
• Identification of software problem sources
• Configuration of BIOS as part of an installation or upgrade
• Changes, modifications, or upgrades to device drivers
• Installation and maintenance of network operating systems (NOS)
• Installation and maintenance of application programs

Refer to your IBM hardware warranty for a full explanation of IBM warranty terms. Be sure to retain your proof of purchase to obtain warranty service.

If possible, be near your computer when you make your call in case the technical assistance representative needs to help you resolve a computer problem. Please ensure that you have downloaded the most current drivers and system updates, run diagnostics, and recorded information before you call. When calling for technical assistance, please have the following information available:
• Machine Type and Model
• Serial numbers of your computer, monitor, and other components, or your proof of purchase
• Description of the problem
• Exact wording of any error messages
• Hardware and software configuration information for your system

**Telephone numbers**

   **Note:** Telephone numbers are subject to change without notice. For the latest list of IBM Support Center telephone numbers and hours of operation, visit the Support Web site at www.ibm.com/pc/support

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## Getting help and service

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40 ThinkPad® R50 Series Service and Troubleshooting Guide
### Countries and Corresponding Telephone Numbers

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*Getting help and service from IBM*
### Getting help and service

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### Getting help around the world

If you travel with your computer or relocate it to a country where your ThinkPad machine type is sold and serviced by IBM or by IBM resellers who are authorized to perform warranty service, International Warranty Service is available for your computer.

Service methods and procedures vary by country, and some services might not be available in all countries. International Warranty Service is delivered through the method of service (such as depot, carry-in, or on-site service) that is provided in the servicing country. Service centers in certain countries might not be able to service all models of a particular machine type. In some countries, fees and restrictions might apply at the time of service.

To determine whether your computer is eligible for International Warranty Service and to view a list of the countries where service is available, go to www.ibm.com/pc/support, and click Warranty. Eligible IBM computers are identified by their four-digit machine types. For more information about International Warranty Service, see Service Announcement 601-034 at www.ibm.com.
Appendix A. Wireless related information

Wireless interoperability

Wireless LAN Mini-PCI Adapter is designed to be interoperable with any wireless LAN product that is based on Direct Sequence Spread Spectrum (DSSS) and/or Orthogonal Frequency Division Multiplexing (OFDM) radio technology, and is compliant to:

- The IEEE 802.11a/b/g Standard on Wireless LANs, as defined and approved by the Institute of Electrical and Electronics Engineers.
- The Wireless Fidelity (WiFi) certification as defined by the WECA (Wireless Ethernet Compatibility Alliance).

Bluetooth Daughter Card is designed to be interoperable with any Bluetooth product that is compliant to Bluetooth Specification 1.1 and 1.2 as defined by the Bluetooth SIG. Following profiles are supported by Bluetooth Daughter Card:

- Generic Access
- Service Discovery
- Serial Port
- Dial-up Networking
- FAX
- LAN Access using PPP
- Personal Area Network
- Generic Object Exchange
- Generic Object Push
- File Transfer
- Synchronization
- Audio Gateway
- Headset
- Printer
- Human Interface Devices (Keyboard/Mouse)
- Basic Image
- Handsfree

Usage environment and your health

Wireless LAN Mini-PCI Adapter and Bluetooth Daughter Card emits radio frequency electromagnetic energy like other radio devices. However, the level of energy emitted is far much less than the electromagnetic energy emitted by wireless devices like for example mobile phones.
Because Wireless LAN Mini-PCI Adapter and Bluetooth Daughter Card operates within the guidelines found in radio frequency safety standards and recommendations, IBM believes the integrated wireless cards are safe for use by consumers. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature.

In some situation or environment, the use of Wireless LAN Mini-PCI Adapter or Bluetooth Daughter Card may be restricted by the proprietor of the building or responsible representatives of the organization. These situations may for example include:

- Using the integrated wireless cards on board of airplanes, or in hospitals
- In any other environment where the risk of interference to other devices or services is perceived or identified as harmful.

If you are uncertain of the policy that applies on the use of wireless devices in a specific organization (e.g. airport or hospital), you are encouraged to ask for authorization to use Wireless LAN Mini-PCI Adapter or Bluetooth Daughter Card prior to turning on the ThinkPad computer.

**Authorized Operation Within the United States and Canada**

The statement below regarding the extended channel mode is applicable when the system supports this function. To check the support of this function, please see the property of the installed wireless card by referring to the extended channel mode enablement instruction.

For systems with 802.11b wireless function supporting Extended Channel Mode:

This device may only be used with Access Points, which are authorized for use within the geography in which they are being used. The use of this device with an Access Point that is not Wi-Fi compliant and not authorized to be used in your geography could result in violation of government regulations. Consult the network administrator, the instruction manual, or the approval label for the Access Point to determine the authorization of your Access Point in your specific country or geographic region.

“Extended Channel Mode” should only be selected when the device is operated outside the USA and Canada to avoid the unlikely possibility of unauthorized operation. The use of this device outside the United States and Canada in “Extended Channel Mode” may use frequencies not authorized for use in the United States and Canada. When used with an authorized Wireless
Access Point that is Wi-Fi compliant or in Ad Hoc mode, this device will operate in its authorized modes in all geographies.

Please reconfigure selected frequencies when you travel from one country to another.

**Enabling Extended Channel Mode**

The statement below regarding the extended channel mode is applicable when the system supports this function. To check the support of this function, please see the property of the installed wireless card by referring to the extended channel mode enablement instruction.

In countries other than the United States and Canada, extra IEEE 802.11b channels may be supported. If you have a problem to connect an Access Point, please contact your system administrator or check your Access Point to know which channel is used. And if the 802.11b channel is 12 or greater, you will need to enable “Extended Channel Mode” with next steps.

2. Right mouse click on My computer on Desktop and select Property.
3. Click on Hardware Tab and push Device Manager Button.
4. Double-click on Network Adapter, locate a wireless adapter device, right mouse click on the device and select Property.
5. Click on Advanced Tab.
6. Select “Extended Channel Mode” and set the value to “Enable”.

**Note:** This will be applied for systems with 802.11b wireless function supporting Extended Channel Mode.
Appendix B. Warranty information

This appendix contains warranty information for your ThinkPad, warranty period, warranty service and support, and the IBM Statement of Limited Warranty.

IBM Statement of Limited Warranty Z125-4753-08 04/2004

Part 1 - General Terms

This Statement of Limited Warranty includes Part 1 - General Terms, Part 2 - Country-unique Terms, and Part 3 - Warranty Information. The terms of Part 2 replace or modify those of Part 1. The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you purchase for your use, and not for resale. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. The term "Machine" does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Nothing in this Statement of Limited Warranty affects any statutory rights of consumers that cannot be waived or limited by contract.

What this Warranty Covers
IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM’s Official Published Specifications ("Specifications") which are available on request. The warranty period for the Machine starts on the original Date of Installation and is specified in Part 3 - Warranty Information. The date on your invoice or sales receipt is the Date of Installation unless IBM or your reseller informs you otherwise. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part. Unless IBM specifies otherwise, these warranties apply only in the country or region in which you purchased the Machine.

THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SOME STATES OR JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD. SOME STATES OR JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

What this Warranty Does not Cover
This warranty does not cover the following:
• any software programs, whether pre-loaded or shipped with the Machine, or installed subsequently;
• failure resulting from misuse (including but not limited to use of any Machine capacity or capability, other than that authorized by IBM in writing), accident, modification, unsuitable physical or operating environment, or improper maintenance by you;
• failure caused by a product for which IBM is not responsible; and
• any non-IBM products, including those that IBM may procure and provide with or integrate into an IBM Machine at your request.

The warranty is voided by removal or alteration of identification labels on the Machine or its parts.

IBM does not warrant uninterrupted or error-free operation of a Machine.

Any technical or other support provided for a Machine under warranty, such as assistance with “how-to” questions and those regarding Machine set-up and installation, is provided WITHOUT WARRANTIES OF ANY KIND.

How to Obtain Warranty Service
If the Machine does not function as warranted during the warranty period, contact IBM or your reseller to obtain warranty service. If you do not register the Machine with IBM, you may be required to present proof of purchase as evidence of your entitlement to warranty service.

What IBM Will Do to Correct Problems
When you contact IBM for service, you must follow the problem determination and resolution procedures that IBM specifies. An initial diagnosis of your problem can be made either by a technician over the telephone or electronically by access to an IBM website.

The type of warranty service applicable to your Machine is specified in Part 3 - Warranty Information.

You are responsible for downloading and installing designated Machine Code (microcode, basic input/output system code (called "BIOS")), utility programs, device drivers, and diagnostics delivered with an IBM Machine ) and other software updates from an IBM Internet Web site or from other electronic media, and following the instructions that IBM provides.

If your problem can be resolved with a Customer Replaceable Unit ("CRU") (e.g., keyboard, mouse, speaker, memory, hard disk drive), IBM will ship the CRU to you for you to install.

If the Machine does not function as warranted during the warranty period and your problem cannot be resolved over the telephone or electronically,
through your application of Machine Code or software updates, or with a CRU, IBM or your reseller, if approved by IBM to provide warranty service, will either, at its discretion, 1) repair it to make it function as warranted, or 2) replace it with one that is at least functionally equivalent. If IBM is unable to do either, you may return the Machine to your place of purchase and your money will be refunded.

IBM or your reseller will also manage and install selected engineering changes that apply to the Machine.

**Exchange of a Machine or Part**
When the warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item.

**Your Additional Responsibilities**
Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to:
1. ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. where applicable, before service is provided:
   a. follow the service request procedures that IBM or your reseller provides;
   b. backup or secure all programs, data, and funds contained in the Machine;
   c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit IBM to fulfill its obligations; and
   d. inform IBM or your reseller of changes in the Machine’s location.
4. (a) ensure all information about identified or identifiable individuals (Personal Data) is deleted from the Machine (to the extent technically possible), (b) allow IBM, your reseller or an IBM supplier to process on your behalf any remaining Personal Data as IBM or your reseller considers necessary to fulfill its obligations under this Statement of Limited Warranty (which may include shipping the Machine for such processing to other IBM service locations around the world), and (c) ensure that such processing complies with any laws applicable to such Personal Data.
Limitation of Liability
IBM is responsible for loss of, or damage to, your Machine only while it is 1) in IBM’s possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Neither IBM nor your reseller are responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM for any reason. You should remove all such information from the Machine prior to its return.

Circumstances may arise where, because of a default on IBM’s part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), except for any liability that cannot be waived or limited by applicable laws, IBM is liable for no more than
1. damages for bodily injury (including death) and damage to real property and tangible personal property; and
2. the amount of any other actual direct damages, up to the charges (if recurring, 12 months’ charges apply) for the Machine that is subject of the claim. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code ("LIC").

This limit also applies to IBM’s suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.

UNDER NO CIRCUMSTANCES IS IBM, ITS SUPPLIERS OR RESELLERS LIABLE FOR ANY OF THE FOLLOWING EVEN IF INFORMED OF THEIR POSSIBILITY: 1) THIRD PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, DATA; 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES; OR 4) LOST PROFITS, BUSINESS REVENUE, GOODWILL OR ANTICIPATED SAVINGS. SOME STATES OR JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. SOME STATES OR JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

Governing Law
Both you and IBM consent to the application of the laws of the country in which you acquired the Machine to govern, interpret, and enforce all of your
and IBM’s rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Statement of Limited Warranty, without regard to conflict of law principles.

**THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE OR JURISDICTION TO JURISDICTION.**

**Jurisdiction**

All of our rights, duties, and obligations are subject to the courts of the country in which you acquired the Machine.

**Part 2 - Country-unique Terms**

**AMERICAS**

**ARGENTINA**

**Jurisdiction:** *The following is added after the first sentence:*

Any litigation arising from this Statement of Limited Warranty will be settled exclusively by the Ordinary Commercial Court of the city of Buenos Aires.

**BOLIVIA**

**Jurisdiction:** *The following is added after the first sentence:*

Any litigation arising from this Statement of Limited Warranty will be settled exclusively by the courts of the city of La Paz.

**BRAZIL**

**Jurisdiction:** *The following is added after the first sentence:*

Any litigation arising from this Agreement will be settled exclusively by the court of Rio de Janeiro, RJ.

**CHILE**

**Jurisdiction:** *The following is added after the first sentence:*

Any litigation arising from this Statement of Limited Warranty will be settled exclusively by the Civil Courts of Justice of Santiago.

**COLOMBIA**

**Jurisdiction:** *The following is added after the first sentence:*

Any litigation arising from this Statement of Limited Warranty will be settled exclusively by the Judges of the Republic of Colombia.

**EQUADOR**

**Jurisdiction:** *The following is added after the first sentence:*

Any litigation arising from this Statement of Limited Warranty will be settled exclusively by the Judges of Quito.
MEXICO
Jurisdiction: The following is added after the first sentence:
Any litigation arising from this Statement of Limited Warranty will be settled exclusively by the Federal Courts of Mexico City, Federal District.

PARAGUAY
Jurisdiction: The following is added after the first sentence:
Any litigation arising from this Statement of Limited Warranty will be settled exclusively by the courts of the city of Asuncion.

PERU
Jurisdiction: The following is added after the first sentence:
Any litigation arising from this Statement of Limited Warranty will be settled exclusively by the Judges and Tribunals of the Judicial District of Lima, Cercado.

Limitation of Liability: The following is added at the end of this section: In accordance with Article 1328 of the Peruvian Civil Code the limitations and exclusions specified in this section will not apply to damages caused by IBM’s willful misconduct ("dolo") or gross negligence ("culpa inexcusable").

URUGUAY
Jurisdiction: The following is added after the first sentence:
Any litigation arising from this Statement of Limited Warranty will be settled exclusively by the City of Montevideo Court’s Jurisdiction.

VENEZUELA
Jurisdiction: The following is added after the first sentence:
Any litigation arising from this Statement of Limited Warranty will be settled exclusively by the Courts of the Metropolitan Area Of the City of Caracas.

NORTH AMERICA

How to Obtain Warranty Service: The following is added to this Section:
To obtain warranty service from IBM in Canada or the United States, call 1-800-IBM-SERV (426-7378).

CANADA
Limitation of Liability: The following replaces item 1 of this section:
1. damages for bodily injury (including death) or physical harm to real property and tangible personal property caused by IBM’s negligence; and

Governing Law: The following replaces “laws of the country in which you acquired the Machine” in the first sentence:

laws in the Province of Ontario.
UNITED STATES
Governing Law: The following replaces "laws of the country in which you acquired the Machine" in the first sentence:
laws of the State of New York.

ASIA PACIFIC

AUSTRALIA
What this Warranty Covers: The following paragraph is added to this Section:
The warranties specified in this Section are in addition to any rights you may have under the Trade Practices Act 1974 or other similar legislation and are only limited to the extent permitted by the applicable legislation.

Limitation of Liability: The following is added to this Section:
Where IBM is in breach of a condition or warranty implied by the Trade Practices Act 1974 or other similar legislation, IBM’s liability is limited to the repair or replacement of the goods or the supply of equivalent goods. Where that condition or warranty relates to right to sell, quiet possession or clear title, or the goods are of a kind ordinarily acquired for personal, domestic or household use or consumption, then none of the limitations in this paragraph apply.

Governing Law: The following replaces "laws of the country in which you acquired the Machine" in the first sentence:
laws of the State or Territory.

CAMBODIA AND LAOS

Governing Law: The following replaces "laws of the country in which you acquired the Machine" in the first sentence:
laws of the State of New York, United States of America.

CAMBODIA, INDONESIA, AND LAOS
Arbitration: The following is added under this heading:
Disputes arising out of or in connection with this Statement of Limited Warranty shall be finally settled by arbitration which shall be held in Singapore in accordance with the Arbitration Rules of Singapore International Arbitration Center (“SIAC Rules”) then in effect. The arbitration award shall be final and binding for the parties without appeal and shall be in writing and set forth the findings of fact and the conclusions of law.

The number of arbitrators shall be three, with each side to the dispute being entitled to appoint one arbitrator. The two arbitrators appointed by the parties shall appoint a third arbitrator who shall act as chairman of the proceedings. Vacancies in the post of chairman shall be filled by the president of the SIAC.
Other vacancies shall be filled by the respective nominating party. Proceedings shall continue from the stage they were at when the vacancy occurred.

If one of the parties refuses or otherwise fails to appoint an arbitrator within 30 days of the date the other party appoints its, the first appointed arbitrator shall be the sole arbitrator, provided that the arbitrator was validly and properly appointed.

All proceedings shall be conducted, including all documents presented in such proceedings, in the English language. The English language version of this Statement of Limited Warranty prevails over any other language version.

**HONG KONG S.A.R. OF CHINA AND MACAU S.A.R. OF CHINA**

**Governing Law:** The following replaces "laws of the country in which you acquired the Machine" in the first sentence: laws of Hong Kong Special Administrative Region of China.

**INDIA**

**Limitation of Liability:** The following replaces items 1 and 2 of this Section:

1. liability for bodily injury (including death) or damage to real property and tangible personal property will be limited to that caused by IBM’s negligence; and

2. as to any other actual damage arising in any situation involving nonperformance by IBM pursuant to, or in any way related to the subject of this Statement of Limited Warranty, the charge paid by you for the individual Machine that is the subject of the claim. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code ("LIC").

**Arbitration:** The following is added under this heading

Disputes arising out of or in connection with this Statement of Limited Warranty shall be finally settled by arbitration which shall be held in Bangalore, India in accordance with the laws of India then in effect. The arbitration award shall be final and binding for the parties without appeal and shall be in writing and set forth the findings of fact and the conclusions of law.

The number of arbitrators shall be three, with each side to the dispute being entitled to appoint one arbitrator. The two arbitrators appointed by the parties shall appoint a third arbitrator who shall act as chairman of the proceedings. Vacancies in the post of chairman shall be filled by the president of the Bar Council of India. Other vacancies shall be filled by the respective nominating party. Proceedings shall continue from the stage they were at when the vacancy occurred.
If one of the parties refuses or otherwise fails to appoint an arbitrator within 30 days of the date the other party appoints its, the first appointed arbitrator shall be the sole arbitrator, provided that the arbitrator was validly and properly appointed.

All proceedings shall be conducted, including all documents presented in such proceedings, in the English language. The English language version of this Statement of Limited Warranty prevails over any other language version.

JAPAN
Governing Law: The following sentence is added to this Section:
Any doubts concerning this Statement of Limited Warranty will be initially resolved between us in good faith and in accordance with the principle of mutual trust.

MALAYSIA
Limitation of Liability: The word "SPECIAL" in item 3 of the fifth paragraph is deleted.

NEW ZEALAND
What this Warranty Covers: The following paragraph is added to this Section:
The warranties specified in this section are in addition to any rights you may have under the Consumer Guarantees Act 1993 or other legislation which cannot be excluded or limited. The Consumer Guarantees Act 1993 will not apply in respect of any goods which IBM provides, if you require the goods for the purposes of a business as defined in that Act.

Limitation of Liability: The following is added to this Section:
Where Machines are not acquired for the purposes of a business as defined in the Consumer Guarantees Act 1993, the limitations in this Section are subject to the limitations in that Act.

PEOPLE’S REPUBLIC OF CHINA (PRC)
Governing Law: The following replaces "laws of the country in which you acquired the Machine" in the first sentence:
laws of the State of New York, United States of America (except when local law requires otherwise).

PHILIPPINES
Limitation of Liability: Item 3 in the fifth paragraph is replaced by the following:
SPECIAL (INCLUDING NOMINAL AND EXEMPLARY DAMAGES), MORAL, INCIDENTAL, OR INDIRECT DAMAGES FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES; OR

Arbitration: The following is added: under this heading
Disputes arising out of or in connection with this Statement of Limited
Warranty shall be finally settled by arbitration which shall be held in Metro Manila, Philippines in accordance with the laws of the Philippines then in effect. The arbitration award shall be final and binding for the parties without appeal and shall be in writing and set forth the findings of fact and the conclusions of law.

The number of arbitrators shall be three, with each side to the dispute being entitled to appoint one arbitrator. The two arbitrators appointed by the parties shall appoint a third arbitrator who shall act as chairman of the proceedings. Vacancies in the post of chairman shall be filled by the president of the Philippine Dispute Resolution Center, Inc. Other vacancies shall be filled by the respective nominating party. Proceedings shall continue from the stage they were at when the vacancy occurred.

If one of the parties refuses or otherwise fails to appoint an arbitrator within 30 days of the date the other party appoints its, the first appointed arbitrator shall be the sole arbitrator, provided that the arbitrator was validly and properly appointed.

All proceedings shall be conducted, including all documents presented in such proceedings, in the English language. The English language version of this Statement of Limited Warranty prevails over any other language version.

**SINGAPORE**

**Limitation of Liability:** The words "SPECIAL" and "ECONOMIC" in item 3 in the fifth paragraph are deleted.

**EUROPE, MIDDLE EAST, AFRICA (EMEA)**

**THE FOLLOWING TERMS APPLY TO ALL EMEA COUNTRIES:**
The terms of this Statement of Limited Warranty apply to Machines purchased from IBM or an IBM reseller.

**How to Obtain Warranty Service:**
Add the following paragraph in Western Europe (Andorra, Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom, Vatican State, and any country subsequently added to the European Union, as from the date of accession):

The warranty for Machines acquired in Western Europe shall be valid and applicable in all Western Europe countries provided the Machines have been announced and made available in such countries.
If you purchase a Machine in one of the Western European countries, as defined above, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM, provided the Machine has been announced and made available by IBM in the country in which you wish to obtain service.

If you purchased a Personal Computer Machine in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, or Ukraine, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

If you purchase a Machine in a Middle Eastern or African country, you may obtain warranty service for that Machine from the IBM entity within the country of purchase, if that IBM entity provides warranty service in that country, or from an IBM reseller, approved by IBM to perform warranty service on that Machine in that country. Warranty service in Africa is available within 50 kilometers of an IBM approved service provider. You are responsible for transportation costs for Machines located outside 50 kilometers of an IBM approved service provider.

**Governing Law:**
The phrase "the laws of the country in which you acquired the Machine" is replaced by:

1) "the laws of Austria" in Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, FYR Macedonia, Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, and FR Yugoslavia; 2) "the laws of France" in Algeria, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo Republic, Djibouti, Democratic Republic of Congo, Equatorial Guinea, French Guiana, French Polynesia, Gabon, Gambia, Guinea, Guinea-Bissau, Ivory Coast, Lebanon, Madagascar, Mali, Mauritania, Mauritius, Mayotte, Morocco, New Caledonia, Niger, Reunion, Senegal, Seychelles, Togo, Tunisia, Vanuatu, and Wallis & Futuna; 3) "the laws of Finland" in Estonia, Latvia, and Lithuania; 4) "the laws of England" in Angola, Bahrain, Botswana, Burundi, Egypt, Eritrea, Ethiopia, Ghana, Jordan, Kenya, Kuwait, Liberia, Malawi, Malta, Mozambique, Nigeria, Oman, Pakistan, Qatar, Rwanda, Sao Tome, Saudi Arabia, Sierra Leone, Somalia, Tanzania, Uganda, United Arab Emirates, the United Kingdom, West Bank/Gaza, Yemen, Zambia, and Zimbabwe; and 5) "the laws of South Africa" in South Africa, Namibia, Lesotho and Swaziland.
Jurisdiction: The following exceptions are added to this section:

1) In Austria, the choice of jurisdiction for all disputes arising out of this Statement of Limited Warranty and relating thereto, including its existence, will be the competent court of law in Vienna, Austria (Inner-City); 2) in Angola, Bahrain, Botswana, Burundi, Egypt, Eritrea, Ethiopia, Ghana, Jordan, Kenya, Kuwait, Liberia, Malawi, Malta, Mozambique, Nigeria, Oman, Pakistan, Qatar, Rwanda, Sao Tome, Saudi Arabia, Sierra Leone, Somalia, Tanzania, Uganda, United Arab Emirates, West Bank/Gaza, Yemen, Zambia, and Zimbabwe all disputes arising out of this Statement of Limited Warranty or related to its execution, including summary proceedings, will be submitted to the exclusive jurisdiction of the English courts; 3) in Belgium and Luxembourg, all disputes arising out of this Statement of Limited Warranty or related to its interpretation or its execution, the law, and the courts of the capital city, of the country of your registered office and/or commercial site location only are competent; 4) in France, Algeria, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo Republic, Djibouti, Democratic Republic of Congo, Equatorial Guinea, French Guiana, French Polynesia, Gabon, Gambia, Guinea, Guinea-Bissau, Ivory Coast, Lebanon, Madagascar, Mali, Mauritania, Mauritius, Mayotte, Morocco, New Caledonia, Niger, Reunion, Senegal, Seychelles, Togo, Tunisia, Vanuatu, and Wallis & Futuna all disputes arising out of this Statement of Limited Warranty or related to its violation or execution, including summary proceedings, will be settled exclusively by the Commercial Court of Paris; 5) in Russia, all disputes arising out of or in relation to the interpretation, the violation, the termination, the nullity of the execution of this Statement of Limited Warranty shall be settled by Arbitration Court of Moscow; 6) in South Africa, Namibia, Lesotho and Swaziland, both of us agree to submit all disputes relating to this Statement of Limited Warranty to the jurisdiction of the High Court in Johannesburg; 7) in Turkey all disputes arising out of or in connection with this Statement of Limited Warranty shall be resolved by the Istanbul Central (Sultanahmet) Courts and Execution Directorates of Istanbul, the Republic of Turkey; 8) in each of the following specified countries, any legal claim arising out of this Statement of Limited Warranty will be brought before, and settled exclusively by, the competent court of a) Athens for Greece, b) Tel Aviv-Jaffa for Israel, c) Milan for Italy, d) Lisbon for Portugal, and e) Madrid for Spain; and 9) in the United Kingdom, both of us agree to submit all disputes relating to this Statement of Limited Warranty to the jurisdiction of the English courts.

Arbitration: The following is added under this heading:

In Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, FYR Macedonia, Moldova, Poland, Romania, Russia, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, and FR Yugoslavia all disputes arising out of this Statement of Limited Warranty or related to its violation,
termination or nullity will be finally settled under the Rules of Arbitration and Conciliation of the International Arbitral Center of the Federal Economic Chamber in Vienna (Vienna Rules) by three arbitrators appointed in accordance with these rules. The arbitration will be held in Vienna, Austria, and the official language of the proceedings will be English. The decision of the arbitrators will be final and binding upon both parties. Therefore, pursuant to paragraph 598 (2) of the Austrian Code of Civil Procedure, the parties expressly waive the application of paragraph 595 (1) figure 7 of the Code. IBM may, however, institute proceedings in a competent court in the country of installation.

In Estonia, Latvia and Lithuania all disputes arising in connection with this Statement of Limited Warranty will be finally settled in arbitration that will be held in Helsinki, Finland in accordance with the arbitration laws of Finland then in effect. Each party will appoint one arbitrator. The arbitrators will then jointly appoint the chairman. If arbitrators cannot agree on the chairman, then the Central Chamber of Commerce in Helsinki will appoint the chairman.

EUROPEAN UNION (EU)

THE FOLLOWING TERMS APPLY TO ALL EU COUNTRIES:
The warranty for Machines acquired in EU countries is valid and applicable in all EU countries provided the Machines have been announced and made available in such countries.

How to Obtain Warranty Service: The following is added to this section:
To obtain warranty service from IBM in EU countries, see the telephone listing in Part 3 - Warranty Information.
You may contact IBM at the following address:
IBM Warranty & Service Quality Dept.
PO Box 30
Spango Valley
Greenock
Scotland PA16 0AH

CONSUMERS
Consumers have legal rights under applicable national legislation governing the sale of consumer goods. Such rights are not affected by the warranties provided in this Statement of Limited Warranty.

AUSTRIA, DENMARK, FINLAND, GREECE, ITALY, NETHERLANDS, NORWAY, PORTUGAL, SPAIN, SWEDEN AND SWITZERLAND
Limitation of Liability: The following replaces the terms of this section in its entirety:
Except as otherwise provided by mandatory law:
1. IBM’s liability for any damages and losses that may arise as a consequence of the fulfillment of its obligations under or in connection
with this Statement of Limited Warranty or due to any other cause related to this Statement of Limited Warranty is limited to the compensation of only those damages and losses proved and actually arising as an immediate and direct consequence of the non-fulfillment of such obligations (if IBM is at fault) or of such cause, for a maximum amount equal to the charges you paid for the Machine. For purposes of this item, the term “Machine” includes Machine Code and Licensed Internal Code (“LIC”).

The above limitation shall not apply to damages for bodily injuries (including death) and damages to real property and tangible personal property for which IBM is legally liable.

2. UNDER NO CIRCUMSTANCES IS IBM, ITS SUPPLIERS OR RESELLERS LIABLE FOR ANY OF THE FOLLOWING, EVEN IF INFORMED OF THEIR POSSIBILITY: 1) LOSS OF OR DAMAGE TO, DATA; 2) INCIDENTAL OR INDIRECT DAMAGES, OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES; 3) LOST PROFITS, EVEN IF THEY ARISE AS AN IMMEDIATE CONSEQUENCE OF THE EVENT THAT GENERATED THE DAMAGES; OR 4) LOSS OF BUSINESS, REVENUE, GOODWILL, OR ANTICIPATED SAVINGS.

FRANCE AND BELGIUM

Limitation of Liability: The following replaces the terms of this section in its entirety:

Except as otherwise provided by mandatory law:

1. IBM’s liability for any damages and losses that may arise as a consequence of the fulfillment of its obligations under or in connection with this Statement of Limited Warranty is limited to the compensation of only those damages and losses proved and actually arising as an immediate and direct consequence of the non-fulfillment of such obligations (if IBM is at fault), for a maximum amount equal to the charges you paid for the Machine that has caused the damages. For purposes of this item, the term “Machine” includes Machine Code and Licensed Internal Code (“LIC”).

The above limitation shall not apply to damages for bodily injuries (including death) and damages to real property and tangible personal property for which IBM is legally liable.

2. UNDER NO CIRCUMSTANCES IS IBM, ITS SUPPLIERS OR RESELLERS LIABLE FOR ANY OF THE FOLLOWING, EVEN IF INFORMED OF THEIR POSSIBILITY: 1) LOSS OF OR DAMAGE TO, DATA; 2) INCIDENTAL OR INDIRECT DAMAGES, OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES; 3) LOST PROFITS, EVEN IF THEY ARISE AS AN IMMEDIATE CONSEQUENCE OF THE EVENT THAT GENERATED THE DAMAGES; OR 4) LOSS OF BUSINESS, REVENUE, GOODWILL, OR ANTICIPATED SAVINGS.

THE FOLLOWING TERMS APPLY TO THE COUNTRY SPECIFIED:
AUSTRIA
The provisions of this Statement of Limited Warranty replace any applicable statutory warranties.

What this Warranty Covers: The following replaces the first sentence of the first paragraph of this section:
The warranty for an IBM Machine covers the functionality of the Machine for its normal use and the Machine’s conformity to its Specifications.

The following paragraphs are added to this section:
The limitation period for consumers in action for breach of warranty is the statutory period as a minimum. In case IBM or your reseller is unable to repair an IBM Machine, you can alternatively ask for a partial refund as far as justified by the reduced value of the unrepaired Machine or ask for a cancellation of the respective agreement for such Machine and get your money refunded.

The second paragraph does not apply.

What IBM Will Do to Correct Problems: The following is added to this section:
During the warranty period, IBM will reimburse you for the transportation charges for the delivery of the failing Machine to IBM.

Limitation of Liability: The following paragraph is added to this section:
The limitations and exclusions specified in the Statement of Limited Warranty will not apply to damages caused by IBM with fraud or gross negligence and for express warranty.

The following sentence is added to the end of item 2:
IBM’s liability under this item is limited to the violation of essential contractual terms in cases of ordinary negligence.

EGYPT
Limitation of Liability: The following replaces item 2 in this section:
as to any other actual direct damages, IBM’s liability will be limited to the total amount you paid for the Machine that is the subject of the claim. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code ("LIC").

Applicability of suppliers and resellers (unchanged).

FRANCE
Limitation of Liability: The following replaces the second sentence of the first paragraph of this section:
In such instances, regardless of the basis on which you are entitled to claim damages from IBM, IBM is liable for no more than: (items 1 and 2 unchanged).
GERMANY

What this Warranty Covers: The following replaces the first sentence of the first paragraph of this section:
The warranty for an IBM Machine covers the functionality of the Machine for its normal use and the Machine’s conformity to its Specifications.

The following paragraphs are added to this section:
The minimum warranty period for Machines is twelve months. In case IBM or your reseller is unable to repair an IBM Machine, you can alternatively ask for a partial refund as far as justified by the reduced value of the unrepaired Machine or ask for a cancellation of the respective agreement for such Machine and get your money refunded.

The second paragraph does not apply.

What IBM Will Do to Correct Problems: The following is added to this section:
During the warranty period, transportation for delivery of the failing Machine to IBM will be at IBM’s expense.

Limitation of Liability: The following paragraph is added to this section:
The limitations and exclusions specified in the Statement of Limited Warranty will not apply to damages caused by IBM with fraud or gross negligence and for express warranty.

The following sentence is added to the end of item 2:
IBM’s liability under this item is limited to the violation of essential contractual terms in cases of ordinary negligence.

HUNGARY

Limitation of Liability: The following is added at the end of this section:
The limitation and exclusion specified herein shall not apply to liability for a breach of contract damaging life, physical well-being, or health that has been caused intentionally, by gross negligence, or by a criminal act.

The parties accept the limitations of liability as valid provisions and state that the Section 314.(2) of the Hungarian Civil Code applies as the acquisition price as well as other advantages arising out of the present Statement of Limited Warranty balance this limitation of liability.

IRELAND

What this Warranty Covers: The following is added to this section:
Except as expressly provided in these terms and conditions, all statutory conditions, including all warranties implied, but without prejudice to the generality of the foregoing all warranties implied by the Sale of Goods Act 1893 or the Sale of Goods and Supply of Services Act 1980 are hereby excluded.
Limitation of Liability: The following replaces the terms of section in its entirety:
For the purposes of this section, a “Default” means any act, statement, omission, or negligence on the part of IBM in connection with, or in relation to, the subject matter of this Statement of Limited Warranty in respect of which IBM is legally liable to you, whether in contract or tort. A number of Defaults which together result in, or contribute to, substantially the same loss or damage will be treated as one Default occurring on the date of occurrence of the last such Default.

Circumstances may arise where, because of a Default, you are entitled to recover damages from IBM.

This section sets out the extent of IBM’s liability and your sole remedy.
1. IBM will accept unlimited liability for death or personal injury caused by the negligence of IBM.
2. Subject always to the Items for Which IBM is Not Liable below, IBM will accept unlimited liability for physical damage to your tangible property resulting from the negligence of IBM.
3. Except as provided in items 1 and 2 above, IBM’s entire liability for actual damages for any one Default will not in any event exceed the greater of 1) EUR 125,000, or 2) 125% of the amount you paid for the Machine directly relating to the Default.

Items for Which IBM is Not Liable
Save with respect to any liability referred to in item 1 above, under no circumstances is IBM, its suppliers or resellers liable for any of the following, even if IBM or they were informed of the possibility of such losses:
1. loss of, or damage to, data;
2. special, indirect, or consequential loss; or
3. loss of profits, business, revenue, goodwill, or anticipated savings.

SLOVAKIA
Limitation of Liability: The following is added to the end of the last paragraph:
The limitations apply to the extent they are not prohibited under §§ 373-386 of the Slovak Commercial Code.

SOUTH AFRICA, NAMIBIA, BOTSWANA, LESOTHO AND SWAZILAND
Limitation of Liability: The following is added to this section:
IBM’s entire liability to you for actual damages arising in all situations involving nonperformance by IBM in respect of the subject matter of this Statement of Warranty will be limited to the charge paid by you for the individual Machine that is the subject of your claim from IBM.

UNITED KINGDOM
Limitation of Liability: The following replaces the terms of this section is in its
Entirety:
For the purposes of this section, a "Default" means any act, statement, omission, or negligence on the part of IBM in connection with, or in relation to, the subject matter of this Statement of Limited Warranty in respect of which IBM is legally liable to you, whether in contract or tort. A number of Defaults which together result in, or contribute to, substantially the same loss or damage will be treated as one Default.

Circumstances may arise where, because of a Default, you are entitled to recover damages from IBM.

This section sets out the extent of IBM’s liability and your sole remedy.

1. IBM will accept unlimited liability for:
   a. death or personal injury caused by the negligence of IBM; and
   b. any breach of its obligations implied by Section 12 of the Sale of Goods Act 1979 or Section 2 of the Supply of Goods and Services Act 1982, or any statutory modification or re-enactment of either such Section.

2. IBM will accept unlimited liability, subject always to the Items for Which IBM is Not Liable below, for physical damage to your tangible property resulting from the negligence of IBM.

3. IBM’s entire liability for actual damages for any one Default will not in any event, except as provided in items 1 and 2 above, exceed the greater of 1) Pounds Sterling 75,000, or 2) 125% of the total purchase price payable or the charges for the Machine directly relating to the Default.

These limits also apply to IBM’s suppliers and resellers. They state the maximum for which IBM and such suppliers and resellers are collectively responsible.

Items for Which IBM is Not Liable
Save with respect to any liability referred to in item 1 above, under no circumstances is IBM or any of its suppliers or resellers liable for any of the following, even if IBM or they were informed of the possibility of such losses:

1. loss of, or damage to, data;
2. special, indirect, or consequential loss; or
3. loss of profits, business, revenue, goodwill, or anticipated savings.

Part 3 - Warranty Information
This Part 3 provides information regarding the warranty applicable to your Machine, including the warranty period and type of warranty service IBM provides.

Warranty Period
The warranty period may vary by country or region and is specified in the table below. NOTE: "Region" means either Hong Kong or Macau Special Administrative Region of China.
A warranty period of 3 years on parts and 1 year on labor means that IBM provides warranty service without charge for:

a. parts and labor during the first year of the warranty period; and b. parts only, on an exchange basis, in the second and third years of the warranty period. IBM will charge you for any labor provided in performance of the repair or replacement(s) in the second and third year of warranty period.

<table>
<thead>
<tr>
<th>Machine Type</th>
<th>Country or Region of Purchase</th>
<th>Warranty period</th>
<th>Types of Warranty Service</th>
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<tbody>
<tr>
<td>1846</td>
<td>US, Canada, Mexico, Brazil, Australia, and Japan</td>
<td>Parts and Labor - 1 year Battery pack - 1 year</td>
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<td></td>
<td>Other</td>
<td>Parts and Labor - 1 year Battery pack - 1 year</td>
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<td>1847</td>
<td>US, Canada, Mexico, Brazil, Australia, and Japan</td>
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<td>1848</td>
<td>All</td>
<td>Parts and Labor - 3 years Battery pack - 1 year</td>
<td>5</td>
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<td>1849</td>
<td>US and Canada</td>
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<td>Parts and Labor - 4 years Battery pack - 1 year</td>
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<td>1870</td>
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<td>1858</td>
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<tr>
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<td>Others</td>
<td>Parts and Labor - 1 year Battery pack - 1 year</td>
<td>7</td>
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Appendix B. Warranty information 65
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<th>Machine Type</th>
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<th>Types of Warranty Service</th>
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</thead>
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<td>Battery pack - 1 year</td>
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<td>1</td>
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<tr>
<td></td>
<td>Others</td>
<td>Parts and Labor - 3 years</td>
<td>7</td>
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<td>Battery pack - 1 year</td>
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<td>Battery pack - 1 year</td>
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<tr>
<td>1862</td>
<td>US, Canada, Mexico, Brazil, Australia, and Japan</td>
<td>Parts and Labor - 4 years</td>
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<td>1</td>
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<td></td>
<td>Others</td>
<td>Parts and Labor - 4 years</td>
<td>7</td>
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<td></td>
<td></td>
<td>Battery pack - 1 year</td>
<td>1</td>
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<td>1863</td>
<td>All</td>
<td>Parts and Labor - 4 years</td>
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<tr>
<td></td>
<td></td>
<td>Battery pack - 1 year</td>
<td>1</td>
</tr>
</tbody>
</table>

**Types of Warranty Service**

If required, IBM provides repair or exchange service depending on the type of warranty service specified for your Machine in the above table and as described below. Warranty service may be provided by your reseller if approved by IBM to perform warranty service. Scheduling of service will depend upon the time of your call and is subject to parts availability. Service levels are response time objectives and are not guaranteed. The specified level of warranty service may not be available in all worldwide locations, additional charges may apply outside IBM’s normal service area, contact your local IBM representative or your reseller for country and location specific information.

1. **Customer Replaceable Unit ("CRU") Service**

IBM provides replacement CRUs to you for you to install. CRU information and replacement instructions are shipped with your Machine and are available from IBM at any time on your request. Installation of Tier 1 CRUs is your responsibility. If IBM installs a Tier 1 CRU at your request, you will be charged for the installation. You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge, under the type of warranty service designated for your Machine. IBM specifies in
the materials shipped with a replacement CRU whether a defective CRU must be returned to IBM. When return is required, 1) return instructions and a container are shipped with the replacement CRU, and 2) you may be charged for the replacement CRU if IBM does not receive the defective CRU within 30 days of your receipt of the replacement.

2. **On-site Service**

IBM or your reseller will either repair or exchange the failing Machine at your location and verify its operation. You must provide suitable working area to allow disassembly and reassembly of the IBM Machine. The area must be clean, well lit and suitable for the purpose. For some Machines, certain repairs may require sending the Machine to an IBM service center.

3. **Courier or Depot Service * **

You will disconnect the failing Machine for collection arranged by IBM. IBM will provide you with a shipping container for you to return your Machine to a designated service center. A courier will pick up your Machine and deliver it to the designated service center. Following its repair or exchange, IBM will arrange the return delivery of the Machine to your location. You are responsible for its installation and verification.

4. **Customer Carry-In or Mail-In Service**

You will deliver or mail as IBM specifies (prepaid unless IBM specifies otherwise) the failing Machine suitably packaged to a location IBM designates. After IBM has repaired or exchanged the Machine, IBM will make it available for your collection or, for Mail-in Service, IBM will return it to you at IBM’s expense, unless IBM specifies otherwise. You are responsible for the subsequent installation and verification of the Machine.

5. **CRU and On-site Service**

This type of Warranty Service is a combination of Type 1 and Type 2 (see above).

6. **CRU and Courier or Depot Service**

This type of Warranty Service is a combination of Type 1 and Type 3 (see above).

7. **CRU and Customer Carry-In or Mail-In Service**

This type of Warranty Service is a combination of Type 1 and Type 4 (see above).

When a 5, 6 or 7 type of warranty service is listed, IBM will determine which type of warranty service is appropriate for the repair.

* This type of service is called ThinkPad EasyServ or EasyServ in some countries.

The IBM Machine Warranty worldwide web site at http://www.ibm.com/servers/support/machine_warranties/ provides a
worldwide overview of IBM’s Limited Warranty for Machines, a Glossary of IBM definitions, Frequently Asked Questions (FAQs) and Support by Product (Machine) with links to Product Support pages. The IBM Statement of Limited Warranty is also available on this site in 29 languages.

To obtain warranty service contact IBM or your IBM reseller. In Canada or the United States, call 1-800-IBM-SERV (426-7378). In other countries, see the telephone numbers below.

**Worldwide telephone list**

Phone numbers are subject to change without notice. For the warranty service contact telephone number in a country not yet reflected in the list below, contact IBM in that country or visit http://www.ibm.com/pc/support/ and click **Support Phone List** for a current telephone listing.

<table>
<thead>
<tr>
<th>Country or Region</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>+44 (0) 1475 555 055</td>
</tr>
<tr>
<td>Argentina</td>
<td>0800-666-0011</td>
</tr>
<tr>
<td>Australia</td>
<td>131-426</td>
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<tr>
<td>Austria</td>
<td>+43-1-24592-5901</td>
</tr>
<tr>
<td>Bolivia</td>
<td>0800-0189</td>
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<tr>
<td>Belgium</td>
<td>Dutch: 02-210-9820</td>
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<tr>
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<td>French: 02-210-9800</td>
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<tr>
<td>Brazil</td>
<td>55-11-3889-8986</td>
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<tr>
<td>Canada</td>
<td>English: 1-800-565-3344</td>
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<tr>
<td></td>
<td>French: 1-800-565-3344</td>
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<tr>
<td></td>
<td>In Toronto: 416-383-3344</td>
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<tr>
<td>Chile</td>
<td>800-224-488</td>
</tr>
<tr>
<td>China</td>
<td>800-810-1818</td>
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<tr>
<td>China (Hong Kong and S.A.R.)</td>
<td>Home PC: 852-2825-7799</td>
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<td></td>
<td>Commercial PC: 852-8205-0333</td>
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<td></td>
<td>ThinkPad General Inquiry: 852-2825-7799</td>
</tr>
<tr>
<td></td>
<td>Hardware Service Hotline: 852-2825-6580</td>
</tr>
<tr>
<td>Colombia</td>
<td>1-800-912-3021</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>284-3911</td>
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<tr>
<td>Cyprus</td>
<td>+357-22-841100</td>
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<tr>
<td>Czech Republic</td>
<td>+420-2-7213-1316</td>
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<tr>
<td>Country or Region</td>
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<tr>
<td>Denmark</td>
<td>4520-8200</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>566-4755 or 566-5161 ext. 8201</td>
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<tr>
<td></td>
<td>Toll Free within the Dominican Republic: 1-200-1929</td>
</tr>
<tr>
<td>Ecuador</td>
<td>1-800-426911</td>
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<tr>
<td>El Salvador</td>
<td>250-5696</td>
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<tr>
<td>Estonia</td>
<td>+386-61-1796-699</td>
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<tr>
<td>Finland</td>
<td>+358-9-459-6960</td>
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<tr>
<td>France</td>
<td>+33-238-557-450</td>
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<tr>
<td>Germany</td>
<td>+49-7032-15-49201</td>
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<tr>
<td>Greece</td>
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<td>Guatemala</td>
<td>335-8490</td>
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<tr>
<td>Honduras</td>
<td>Tegucigalpa &amp; San Pedro Sula: 232-4222 San Pedro Sula: 552-2234</td>
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<td>Hungary</td>
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<tr>
<td>India</td>
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<td>Indonesia</td>
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<td>Ireland</td>
<td>+353-(0)-1-815-9200</td>
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<tr>
<td>Italy</td>
<td>+39-02-7031-6101</td>
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| Japan             | *Desktop: 0120-887-870  
|                   | *Overseas calls: 81-46-266-4724  
|                   | *ThinkPad: 0120-887-874  
|                   | *Overseas calls: 81-46-266-4724  
|                   | IntelliStation and xSeries: 81-46-266-1358  
|                   | PC Software: 0120-558-695  
<p>|                   | *Overseas calls: 81-44-200-8666 |
| Korea             | 1588-5801       |
| Latvia            | +386-61-1796-699|
| Lithuania         | +386-61-1796-699|
| Luxembourg        | +352-298-977-5063|
| Malta             | +356-23-4175    |</p>
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<th>Country or Region</th>
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<tr>
<td>Mexico</td>
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<tr>
<td>Middle East</td>
<td>+44 (0) 1475-555-055</td>
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<tr>
<td>Netherlands</td>
<td>+31-20-514-5770</td>
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<tr>
<td>New Zealand</td>
<td>0800-446-149</td>
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<tr>
<td>Nicaragua</td>
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<td>Norway</td>
<td>66-99-89-60</td>
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<td>Panama</td>
<td>206-6047</td>
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<tr>
<td>Peru</td>
<td>0-800-50-866</td>
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<td>Philippines</td>
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<td>Poland</td>
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<td>Portugal</td>
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<td>Russian Federation</td>
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<td>Singapore</td>
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<td>Slovenia</td>
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<tr>
<td>Spain</td>
<td>+34-91-714-7983</td>
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<tr>
<td>Sri Lanka</td>
<td>94-11-2448-442</td>
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<td>94-11-2493-500</td>
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<tr>
<td>Sweden</td>
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<tr>
<td>Switzerland</td>
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<tr>
<td>Taiwan</td>
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<tr>
<td>United Kingdom</td>
<td>+44-1475-555-055</td>
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<td>1-800-IBM-SERV (1-800-426-7378)</td>
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<tr>
<td>Vietnam</td>
<td>Ho Chi Minh: (848) 824-1474</td>
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<td>Hanoi: (844) 842-6316</td>
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**Note:** *The numbers will be answered with a Japanese language voice prompt. For telephone support in English, please wait for the Japanese voice prompt to end, and an operator will answer. Please ask for "English support please," and your call will be transferred to an English speaking operator.*

**Guarantee supplement for Mexico**

This supplement is considered part of IBM's Statement of Limited Warranty and shall be effective solely and exclusively for products distributed and commercialized within Territory of the Mexican United States. In the event of a conflict, the terms of this supplement shall apply.

All software programs pre-loaded in the equipment shall only have a thirty-(30) day guarantee for installation defects from the date of purchase. IBM is not responsible for the information in such software programs and/or any additional software programs installed by you or installed after purchase of the product.

Services not chargeable to the guarantee shall be charged to the final user, prior an authorization.

In the event that warranty repair is required please call the Support Center at 001-866-434-2080, where you will be directed to the nearest Authorized Service Center. Should no Authorized Service Center exist in your city, location or within 50 miles of your city or location, the guarantee includes any reasonable delivery charges related to the transportation of the product to our nearest Authorized Service Center. Please call the nearest Authorized Service Center to obtain the necessary approvals or information concerning the shipment of the product and the shipment address.

To obtain a list of Authorized Service Centers, please visit:

**IBM de México, Manufactura y Tecnología, S. A. de C. V.**
Camino a El Castillo 2200
El Salto, Jalisco
C.P. 45680,
Tel. 01-800-3676900

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Appendix C. Customer Replacement Units (CRUs)

Customer replaceable units (CRUs)

For your ThinkPad computer, the following parts are designated Customer Replaceable Unit (CRU) parts.

Listed below are the CRUs and the documentation where removal/replacement instructions are located.

<table>
<thead>
<tr>
<th></th>
<th>Service and Troubleshooting Guide</th>
<th>Setup Poster</th>
<th>Access IBM</th>
<th>Online Hardware Maintenance Manual</th>
<th>Online Video</th>
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<tr>
<td>Tier 1 CRUs</td>
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<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>AC adapter and power cord</td>
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<td>X</td>
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<td></td>
<td></td>
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<tr>
<td>Trackpoint cap</td>
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<tr>
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<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
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<td>X</td>
<td>X</td>
<td></td>
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<tr>
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<tr>
<td>Communication Daughter Card</td>
<td></td>
<td>X</td>
<td>X</td>
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<tr>
<td>Keyboard</td>
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</table>

You can find instructions for replacing CRUs in Access IBM, your on-board help. To start Access IBM, press the blue Access IBM button on your ThinkPad.

If you are unable to access these instructions or if you have difficulty replacing a CRU, you can use either of the following additional resources:

- The Online Hardware Maintenance Manual and Online Videos available on the IBM Support Web site
  
• The IBM Support Center. For the telephone number of the Support Center for your country or region, see “Worldwide telephone list” on page 68.
Appendix D. Notices

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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult an IBM authorized dealer or service representative for help.

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Responsible Party:
International Business Machines Corporation
New Orchard Road
Armonk, NY 10504
Telephone 1-919-543-2193

Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE

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Avis de conformité à la réglementation d’Industrie Canada
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If you are a company employee and need to dispose of a ThinkPad computer that is the property of the company, you must do so in accordance with the Law for Promotion of Effective Utilization of Resources. The computer is categorized as industrial waste. It should be properly disposed of by an industrial waste disposal contractor certified by a local government. In
accordance with the Law for Promotion of Effective Utilization of Resources, IBM Japan provides, through its PC Collecting and Recycling Services, for the collecting, reuse, and recycling of disused computers. For details, visit the IBM Web site at www.ibm.com/jp/pc/service/recycle/

Pursuant to the Law for Promotion of Effective Utilization of Resources, the collecting and recycling of home-used computers by the manufacturer was begun on October 1, 2003. For details, visit the IBM Web site at www.ibm.com/jp/pc/service/recycle/personal.html

Disposing of a ThinkPad computer component containing heavy metal

The printed circuit board of a ThinkPad computer contains heavy metal. (Soldering with lead is used on the printed circuit board.) To properly dispose of the disused printed circuit board, follow the instructions in Collecting and recycling a disused ThinkPad computer.

Disposing of a disused lithium battery

A button-shaped lithium battery is installed on the system board of your ThinkPad computer to back up the main battery. If you want to replace it with a new one, contact your place of purchase or ask for a repair service provided by IBM. If you have replaced it by yourself and want to dispose of the disused lithium battery, insulate it with vinyl tape, contact your place of purchase, and follow the instructions.

If you use a ThinkPad computer at home and need to dispose of a lithium battery, you must comply with local ordinances and regulations.

Handling a disused ThinkPad battery pack

Your ThinkPad computer has a lithium ion battery pack or a nickel metal hydride battery pack. If you are a company ThinkPad computer user and need to dispose of a battery pack, contact the proper person in IBM sales, service, or marketing, and follow that person’s instructions. You can also see the instructions at www.ibm.com/jp/pc/recycle/battery

If you use a ThinkPad computer at home and need to dispose of a battery pack, you must comply with local ordinances and regulations.
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