

Toshiba EasyGuard
Carefree Mobile Computing



Toshiba EasyGuard is the better way to enhanced data security, advanced system protection and easy

connectivity. This next-generation computing experience incorporates technologies enabling optimal connectivity and security, Toshiba hardware innovations and advanced software utilities for carefree mobile computing.

Three core elements for carefree mobile computing

In addressing the need for enhanced data security, advanced system protection and easy connectivity, Toshiba EasyGuard features can be divided into three core elements:

Secure Features that deliver enhanced system and data security

Protect & Fix Protective design features and diagnostics utilities for maximum uptime

Connect Features and software utility that ensure easy and reliable wired and wireless connectivity



What is HDD Protection?

If a notebook is dropped and damaged, it could easily cause data loss and hard disk failure.

Hard disk drive (HDD) protection, a feature of Toshiba EasyGuard, is designed to prevent the damage to the hard disk drive as well as to data as a result of shock, fall or vibration.

Why is it important to protect the hard disk drive?

The HDD head is the device that moves over, without touching, the spinning media disk when reading or writing data. If the HDD head comes in contact with the spinning media, the unexpected shock and vibration can cause damage to the media resulting in data loss or even destroying it completely.

As a result, Toshiba developed and implemented HDD Protection, a function that prevents the hard disk drive head from scratching HDD media in case of shock, vibration or fall. This protection results as a unique combination of a 3-D accelerometer developed by Toshiba and HDD shock protection.

How does HDD shock protection work?

Shock protection provides the notebook with a higher impact protection and reliability of key hardware components. Part of this functionality is the HDD shock absorber protection designed to improve the durability of the hard disk drive. Shock absorber material is added around the hard-drive disk and works as a corner bumper mechanism, which buffers the shock from physical drop.



Accidental falls can damage notebook disk drive

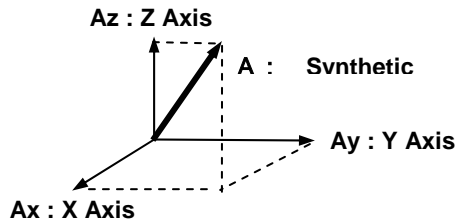


Shock absorber material is added around the hard drive disk and works as a corner bumper mechanism

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What is a 3-D accelerometer and how does it protect the HDD?

The 3D acceleration sensor is a full 3-axis motion monitor that is capable of detecting free fall in all directions with equal intensity. This monitoring capability accurately filters out minor tilt movements and detects sudden vibrations.

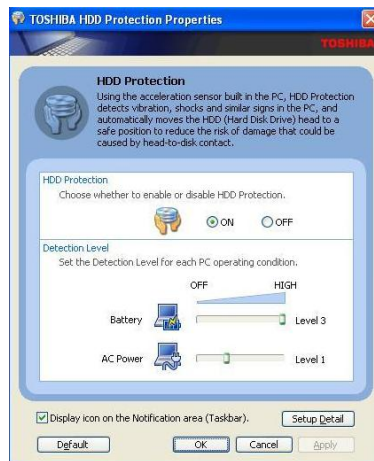


Upon detection of a potential fall, the HDD head is unloaded. This process removes the head from close proximity to the media, and so decreases the possibility of damage. Once the notebook returns to a stationary state, the head is loaded back to its regular position.

In order to avoid false detection, the HDD protection GUI (general user interface) offers four protection levels:

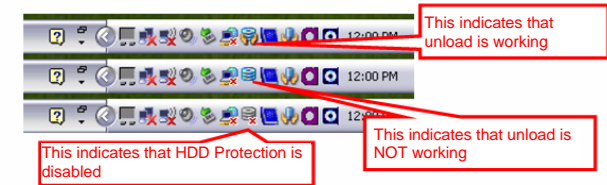
1. Off
2. Level 1 : Lowest sensitivity
3. Level 2 : Versatile sensitivity
4. Level 3 : Highest sensitivity (Default)

In some unstable circumstances, such as in a car or on knees, the notebook is subjected to continuous, non-risk movement. In such conditions, protection level 2 is advised. The detect level can be raised again when the notebook is used on a desk and with an AC adapter.



The protection level is temporally maximized 10 seconds after actions such as closing the LCD or unplugging the AC adaptor on the assumption that the notebook may be shortly picked up. The 3D sensitivity will also automatically go up as the tilt angle increases.

The HDD Protection toolbar indicates whether the Toshiba protection is working, and whether the head load/unload process is working correctly. Upon detection of a potential fall or vibration, an information message will pop-up informing the user of the risk.



Summary of features and benefits

- ▶ **3D accelerometer** Detects free fall in all directions
- ▶ **HDD head unloading** Decreases risk of media disk damage
- ▶ **Various protection levels** Decreases possibility of false detection
- ▶ **Shock absorption material** Improves hard disk drive durability