

## Qosmio RAID Support Optimizing Performance and Reliability



The Qosmio G20, the latest addition to the Toshiba's range of AV notebook PCs, supports a variety of key technologies that ensure users enjoy the best in mobile entertainment and information, all in one reliable, high-performance system. One such technology is RAID, which stands for Redundant Array of Independent Disks. Qosmio's built-in RAID support provides increased storage space and fail-safe redundancy to ensure maximum performance and data protection.

This article provides an overview of RAID technology and explains the features and benefits associated with Qosmio G20's multi-level RAID support.



*RAID support is a key new feature of the Qosmio G20.*

## What is RAID?

Simply put, RAID is a method of creating one or more pools of data storage space from several hard disk drives (HDD). Combining HDD resources in this fashion provides increased disk space for data back up, improving system performance. RAID can also achieve simultaneous data duplication on multiple drives, thereby providing users with improved fault tolerance and solid data loss protection.

While RAID disk drives are frequently implemented on servers, they generally aren't necessary at the personal computing level.

## Why RAID on Qosmio?

Qosmio users aren't your typical PC users. They are tech-savvy end-users who will be using their Qosmio to record and playback audio and video information, including MP3 collections, video files of recorded television programmes and personal information and entertainment content, such as digital photos and home videos.

RAID support offers these users a two-fold advantage. They have the flexibility to choose more storage capacity or more reliability with data redundancy.

## RAID Levels

The Qosmio G20 supports two levels of RAID, Level 0 and Level 1.

### RAID Level 0 (Data Striping): Providing Superior Performance and Storage

RAID Level 0 implements a striped disk array which breaks data down into blocks and then spreads the blocks out across multiple disk drives. Essentially, RAID Level 0 allows two disk drives to act as a single, large capacity hard drive, improving performance and increasing storage capacity: an important benefit for users who take

### Qosmio G20 RAID Support Technical Features:

- **HDD password support on RAID Level 1**, same as stand alone configuration.
- **Hot Reconfiguration support**, ensures user can easily change configuration status from stand alone to RAID Level 1, and back again.
- **RAID status icon on the Windows task tray**, provides easy access to RAID utility for checks and changes.
- **Two-way HDD alarm**, informs users of impending hard drive threat using both a buzzer and pop-up.

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advantage of Qosmio's extensive HDD/DVD recording functionality. RAID Level 0 does not provide fault tolerance or data redundancy.

## **RAID Level 1 (Data Mirroring): Leveraging Redundancy to Ensure Reliability**

Qosmio G20 also supports RAID Level 1 technology, or "Data Mirroring." When RAID Level 1 is configured, the operating system automatically determines hard disk drive capacity by detecting the size of the smaller hard drive. However, RAID Level 1 ensures that data is always saved on two hard disc drives simultaneously. This duplication of content overcomes the lack of redundancy associated with RAID Level 0, ensuring dependable fault tolerance and protection against data loss. The end result is that Qosmio users can continue computing, with zero down time, if either of the HDDs crashes.

RAID Level	RAID Feature	Benefit
Level 0	Data striping spreads out blocks of data across multiple drives.	Improved system performance.
Level 0	Resources from two drives are combined into one single HDD.	Increased storage capacity.
Level 1	Uninterrupted computing if either HDD crashes.	Enhanced productivity and satisfaction, thanks to zero down time.
Level 1	All data simultaneously saved on two disk drives (data mirroring).	Ensured reliability and data loss protection.
Level 1	Provides twice the read transaction rate and the same write transaction rate of single disk configuration.	Enhanced system efficiency.

## **RAID Technology in Qosmio G20: the Bottom Line**

Qosmio G20's new RAID support delivers the performance, capacity and reliability demanded by today's tech-savvy consumers. Whether recording television programs to watch later, burning a personalized CD collection, typing a school report, surfing the Internet—or performing several of these activities simultaneously—Qosmio empowers users to access, record and store their personal information and entertainment content efficiently and without incident, every time.

