



Customer Case Study

CUSTOMER: TVonics

CHALLENGE: Develop quiet, low-energy digital video recorders

SOLUTION: CinemaStar 7K500 250 GB hard drives from Hitachi



TVonics DVR-FP250

TVonics

The First Freeview Playback DVR Comes to Britain, Thanks to TVonics and Hitachi's CinemaStar™ Drive

Background

Gone are the days of recording your favorite TV shows or movies on videotape. VCRs have pretty much gone the way of the dinosaur and have been replaced with digital video recorders (DVRs). DVRs record anything from your TV onto a hard disk drive, which allows you to pause live TV and record many more shows than you could on a single videotape cassette.

In the United States, Tivo was the first major player in the DVR market. It is a stand-alone product that works with your local cable or satellite programming. Soon after, Comcast, DirecTV and Dish Network created their own DVRs build directly into their cable/satellite boxes.

The Challenge: Meet performance requirements and design ethics

In Britain, TVonics was looking to be the first to market with a DVR to record, pause and rewind live free-to-air digital TV with the Freeview Playback brand. Freeview, which offers digital terrestrial TV services in the U.K., launched the Freeview Playback brand in June 2007 to raise awareness of the functionality available to users. However, to get the Freeview Playback accreditation, TVonics had to comply with strict quality tests. Developed by the Digital

TV Group, the industry association for digital television in the U.K., the testing ensures products can support key features, such as accurate digital recording.

Because TVonics had to comply with such strict standards, it couldn't just put any hard drive into the new DVR-FP250. The drive had to have the performance that TVonics required and had to have enough capacity. And, at the same time, it had to have low power consumption and have quiet acoustics that were in line with TVonics' design ethics.

The Solution: Testing confirms Hitachi CinemaStar's performance

Enter Hitachi's CinemaStar™ 7K500 hard drive. The CinemaStar line of hard drives specifically addresses the needs of digital TV recorders and set-top box applications:

- > Silent-seek acoustics for "bedroom quiet" operation
- > Low-power idle allowing for cooler system operation and greater host-product reliability
- > SMART Command Transport and adaptive error recovery for optimized video streaming and picture quality
- > SmoothStream™ to minimize disruptions in video stream delivery



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CinemaStar 7K500

500, 400, 320 and 250 GB | 7200 RPM
PATA-133 and SATA 3 Gb/s

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– Paul Fellows
Founder and CEO, TVonics
”

> Thermal monitoring and Thermal Fly-height Control (TFC) to maintain consistent fly-height for improved error rates in varied temperature conditions

TVonics did its own testing, comparing the CinemaStar against the Caviar 250GB drive from Western Digital and a comparable drive from Seagate. Testing involved mechanical, thermal and acoustic testing. Samples were used for drop and vibration testing on the packaged product. Thermal measurements were taken from several points on the main power board and hard disk drive in several conditions – ambient, raised ambient, ventilation blocked and fan-fail conditions. Caustic testing was performed on units in home conditions using cupboard and flat table platforms.

The testing by TVonics, which lasted more than two weeks, demonstrated that the CinemaStar hard disk drive rated best overall based on noise in operation, power consumption and cost effectiveness.

Once TVonics selected the CinemaStar, the relationship with Hitachi did not end. Hitachi's engineering analysis offered TVonics some strategic advice as to how to engineer the overall product so consumers would get the best experience from it. Hitachi also lent test expertise to check that the product was performing as well as it should in a live environment before full production.

Results

The DVR-FP250 is available and selling well. All major U.K. electronics retailers have ordered the product, including Currys, Comet and Argos. Customers have been very satisfied with the product and its performance.

“The Hitachi name gives consumers reassurance that premium components are contained within the product,” said Paul Fellows, Founder and CEO from TVonics. “We use Hitachi branding on the outside of the TVonics packaging and on the back panel of the product itself.”

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Hitachi Global Storage Technologies
3403 Yerba Buena Road
San Jose, CA 95135 USA

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