



FireKing MediaVault HD Review

By Robert Mohns (March 8th, 2009)

Introduction

We tend not to spend much time thinking about things that aren't pleasant... like data loss and disasters. But any business that depends upon its data cannot afford to ignore such things. With the growing quantity and importance of the information we keep electronically, even individuals must be increasingly backup-savvy. As documented in the steady discussion of backups and hard drives in MacInTouch reader reports, people have devised a wide variety of approaches to backup and disaster recovery, ranging from casual to extremely robust.



With this background, we recently have had an opportunity to review an unusual new device: a *fire-proof* hard drive.

The MediaVault HD from FireKing (a 58-year-old company specializing in fireproof storage) provides a USB-connected hard drive (or two) in an enclosure certified by Underwriters Labs to survive a Class 125, 1-hour fire. In ordinary terms, that means surviving a constant 1700° F (927° C) for an hour, with the container's contents rising to no hotter than 125° F (52° C) — well within the operating maximums of most hard drives.

Features

The MediaVault, at 55 pounds (25 Kg), is the biggest, heaviest hard drive we've ever seen, but most of that isn't hard drive, it's the massive fireproof enclosure.

Visually, it's a big beige box with a locking lid with a small box of electronics on the back and a pair of mini-USB ports. After you unlock the massive lid and heave it up, you see a small internal compartment with a tray containing a bus-powered 250GB hard drive in an ordinary portable USB case. USB cables emerge from the side wall of the case to connect the drives. A slot and cable for a second drive are supplied, and there's leftover room for other small media such as camera cards or USB thumb drives — or perhaps an unconnected portable hard drive.

To use the MediaVault, connect the internal USB cable to the drive, then use the supplied USB cable to connect the giant to your Mac or PC.

Portable hard drives sometimes need more power than the USB bus can supply, so to ensure the hard drive gets enough power, FireKing provides a special USB cable with two USB plugs to connect to your computer. However, we tested with only one of the plugs connected and no matter how we pushed the drive, we couldn't cause problems from lack of power. We asked FireKing if this cable was really required, and they said that while they recommend its use, most high quality cables should be adequate for the 250 GB drive they use, even during spin-up or heavy seeking. (The cable uses solid, 24-gauge conductors; many inexpensive USB cables use smaller cables that can't carry as much power.) Should you lose it, they offer their cable as a service part, or you can just buy one on the aftermarket.





Performance

Once you've set up the unusual box, it acts just like any other USB hard drive. The disk appears on a Mac's desktop, can be reformatted to the Mac HFS+ file system and is bootable on any USB-boot capable Mac (i.e. all Macs made this century). We used the MediaVault to make full system clones using SuperDuper (a popular backup application among MacInTouch readers) and ran it as a Time Machine backup target for a few weeks, as well. We never saw any glitches.



FireKing uses a Seagate Momentus 5400.4 model 2.5" laptop drive, which carries its own 5-year warranty (independent of FireKing's own 3-year product warranty). Performance is typical for a portable USB hard drive. It won't win any speed awards, but that's not its purpose in life. Its purpose is to survive fire.

Survivability

Due to the expense of the unit, FireKing asked us not to actually take a blow-torch to the enclosure, but we had an extensive conversation about testing procedures and the certification process with FireKing Product Director Bill Rush. Combined with FireKing's five-plus decades of experience in disaster storage and records protection, we feel pretty secure about this device's ability to fulfill its promise.

Underwriters Laboratories certifies products against certain performance characteristics. The device is tested by placing it on a pedestal in a walk-in gas-fired oven, bringing the oven temperature to 1700°F, then holding it at that temperature for an hour. The fire is turned off, and the device allowed to cool until it reaches room temperature again.

Throughout the whole process, a thermocouple inside the enclosure provides temperature telemetry. (The sensor is run up through a small hole drilled in the base of the enclosure, so if anything, it should make the MediaVault perform more poorly than designed!) The results are interesting; due to the heat-soak characteristics of the enclosure, at the end of the one-hour test, the temperature inside is just 85°F. The temperature actually peaks at 115 to 120°F ... *four hours later*. If you get the safe within a few hours of a fire, we imagine it won't even get this far (though we wouldn't recommend touching the outside without protective gloves).

We had to ask, though: Doesn't the USB cable that passes through the case make it vulnerable? Wouldn't the metal conductors pass heat into the drive? And what about power problems during a fire, as an attached server failed or building power fluctuated?

The USB cable, being small diameter, has low heat conductivity potential. But more importantly, the cables literally burn away in a 1700°F fire. In FireKing's testing, the cables burned down slightly into the wall of the unit, but once in there, the burning stopped. The ends of the cable oxidize, the plastic melts, and the remaining metal loses its exposure to conduction. Essentially, as Bill Rush put it, "it turns from a cable into a plug."

With regard to the power issue, a best practices scenario would be that the server or workstation using the MediaVault HD is on a UPS, which will smooth power spikes. But in most fires, it's more common for facility power simply to fail. Even a cheap portable USB drive won't be adversely affected by this — it's no worse than hot-unplugging the drive. (The drive enclosure MediaVault chose seems to be good quality, based on our experience with a variety of cheap and expensive enclosures.) Ultimately, the attached computer is going to fail from the fire well before the MediaVault is at much risk; once power is gone, the drive is no longer exposed. If you use a journaling file system (as is common on modern Macs), you'll minimize the risk of last-moment data loss as the server or workstation fails.



We also wondered, what is a typical fire profile in a commercial or residential setting? In most scenarios, there is not a continuous feed of combustibles in a room. Fire spreads, but as it runs out of fuel in an area, it stops burning — so in most situations, peak temperature isn't maintained in one spot for long. A fire might last five hours from start to end, for example, but no one location is likely to maintain peak temperature. 1700°F is at the high end of fires — a worst case. It is rare for temperatures to actually get this high, and they don't stay there.

We were concerned that the very same heat-soaking insulation that makes the MediaVault so resistant to fire could create heat problems for the drive itself in routine use. FireKing tested this, too, and tells us the highest temperature they've been able to get inside the enclosure (by thrashing the drive, not unlike our own tests) is 107°F asymptotic. We ran this drive for weeks on backup duty, with hourly updates; under this use, the inside of the enclosure never got hot, just a little warmer than room temperature (about 70°F). (The hard drive's rated operating maximum temperature is about 140° F (60° C); non-operating max is 155° F (70° C).)

FireKing has put a lot of thought, not to mention destruction testing, into designing the MediaVault HD. If we're Mac geeks, then they're fire geeks — just the sort of people we want designing this kind of device.

Applications

So, who needs this sort of heavy duty engineering? Aren't there other approaches to backup? Absolutely. But every backup system has a trade off; a comprehensive backup strategy will use multiple methods to balance them the trade-offs.

Online storage is growing in popularity (and we use it for some applications ourselves). But, as has been noted extensively in MacInTouch reader reports, recovering your data is the Achilles heel of online backup — can your business operations afford to wait a week or four while you download gigabytes of data from online backup? If the answer is "no", you should look into adding local backup options to your arsenal.

And that's where the MediaVault HD comes in. In an ideal scenario, of course, you can just pick up your backup drive and take it with you as you walk ("do not run") out the door. But what about the hours you're not in the office? Or, are you going to make a detour to a server closet on your way out of the building? One hopes to be able to grab the data on the way ... but disaster preparedness isn't about hope, it's about planning for unpalatable contingencies.

We see using the MediaVault with a server or workstations to store business-critical data that the business cannot operate without. Of course, you should also be rotating backup media off-site; the MediaVault's use of standard portable USB hard drives facilitates this. (You aren't restricted to the drives supplied by FireKing.) MediaVault gives your data a fighting chance, and you a chance to recover the most recent, up-to-date version of it — and help get your business up and running again.

Conclusions

MediaVault HD is targeted at small and medium businesses that are digital-asset-intensive; its \$1359 price tag puts it outside the budget of the casual home user (although very substantial discounts are available via Amazon). It's certainly a natural for law practices and medical offices; we think it also has clear use for creative professionals. And it could provide some "insurance" to small businesses without dedicated IT staff around to perform regular off-site backups. The dual-drive model, combined with robust drive mirroring software such as SoftRAID, could provide an additional measure of protection. Of course, we never advocate putting all your eggs in one basket; MediaVault HD should be part of a bigger backup strategy.

MediaVault HD is made in the US, at FireKing's factory in New Albany, Indiana. It comes with a three-year warranty on drives and enclosure. We think the "Vault" part of the MediaVault is what you're paying for — since it uses standard USB 2.0 drives, you can just keep dropping in bigger "Media" (drives) over time. It's a device that doesn't wear out — it just sits there quietly passing





signals between computer and drives.

We would like to see a network variant of the MediaVault HD, to make it easier for non-technical users to use it to backup multiple computers in an office. And some Mac backup software would be nice to include (it does have Windows backup software).

If you're charged with disaster planning, you've probably looked a lot of options, from online storage to piles of tapes. FireKing's new MediaVault HD is another tool in the toolkit. We're impressed and think it's worth a look. We hope we never actually need its distinctive capabilities... but hope isn't what we use for our backup and recovery strategies.

Pros

- well-designed fire protection
- USB offers broad compatibility, upgradeability
- eSATA
- Made in USA

Cons

- limited capacity (two drivers)
- USB slower than FireWire or

Links

Amazon

[FireKing MediaVault HD 250 GB](#) (approx. 40% discount)

[FireKing MediaVault HD Dual 250 GB](#) (approx. 40% discount)

MacInTouch Reader Reports

[Hard Drives](#)

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Resources

[FireKing](#)

[Seagate Momentus 5400.4 Spec Sheet](#) (PDF)

Document History

March 08, 2009: Completed.