

A white paper from **Active Thermal Management**  
*The trusted name in thermal protection*

By Frank Federman, CEO

## Cooling the built-in cabinet

While some cabinets can be difficult to ventilate, first prize in the “I bet you can’t cool THIS one” contest has to go to the built-in cabinet. Whether fully recessed into a wall or flanked by bookcases and/or fireplaces, the built-in is one that really tests our ingenuity. Filled with audio-video gear, frequently a PlayStation, and, increasingly, a computer, cooling is both important and difficult. Our white paper “Cooling the *almost impossible* Cabinet” covers built-in cabinets in homes that have crawl spaces or basements below, but, as installers in California and Florida say, “what’s a basement?”

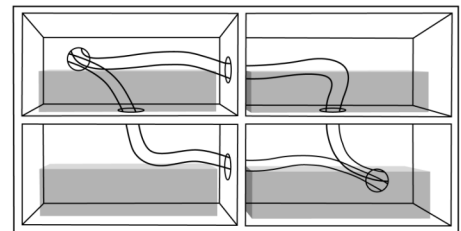
The cabinet was designed and built with no thought given to cooling the audio-video gear to be housed within it. You can be sure that the owner gave a lot of thought to that gear – you probably spent a LOT of time discussing it with him! The cabinet maker was told to allow for ventilation, and said he would...

He didn’t.

Now the ball is in your court, but it’s more of a hot potato, with the emphasis on “hot”.

The satellite receiver or cable box, (hi-def, of course) is going to run 24/7, and there’s probably a TiVo or PVR. Add in the multichannel receiver, DVD player, and a video game console and you have a bake-at-350-degrees-until-done recipe for trouble.

There are several possible ways to ventilate the built-in cabinet. If the other side of the wall behind it is in a utility room, laundry, or a spare bedroom, you could move air in and out of the cabinet through its back panel and the wall, using the room behind as a very large heat sink, as shown in Figure 1. Fresh air would enter through the opening at the bottom right,

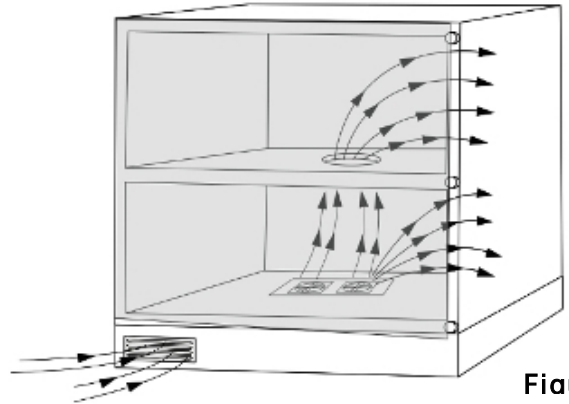


upper left section of the cabinet. ATM can supply systems such as the Cool-vent series, which combine quiet fans and attractive wood grilles in many different sizes and species of wood which can be finished to match the wall. **Figure 1**

In most cases, the room behind the cabinet will not be usable for ventilation; it may be a living room, master bedroom, or the wall may be an outside wall.

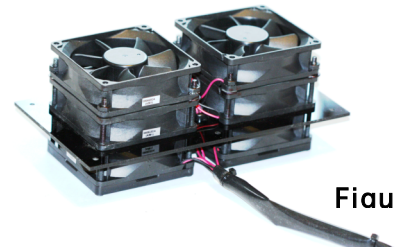
The solution may be the new Active Thermal Management System 4, designed for use “when all else fails”...

Using only one small opening at the very bottom of a cabinet, trimmed with either a wood or black or satin silver anodized aluminum grille, the new “6-pack” fan module developed by ATM is powerful enough to quietly pull fresh air in from under the cabinet’s floor and force heated air out through the gap between the cabinet’s doors as shown in Figure 2. ***If the cabinet is wall-hung or stands on legs, no additional opening is required for air intake.*** Where doors close completely, small shims supplied with each system can be used to create narrow gaps. Like all ATM products, the System 4 is completely automatic; fan operation and speed is controlled by the temperature within the enclosure.



Figure

The major individual components are the control box, power supply, and the “six-pack” fan assembly, shown in Figure 3... The fan assembly sits in a rectangular opening made in the rear of the cabinet floor, with four fans suspended beneath the floor and two within the cabinet. The use of twin “three stacks” of fans gives the System 4 enough power to move a significant amount of air through small gaps between doors or doors and frame.



Figure

***Although an easy system to install, please note that other Active Thermal Management cooling systems move more air. If the installation (and the owner!) permits, a System 2 Kit, Cool-vent, Cool-line, or one of our other systems would move more air than the System 4, although more visible cabinet openings would be required.***

Contact Active Thermal Management at (661) 294-7999 M-F, 8:30 - 4:30 PST for the name of your closest distributor, for

more information on the products mentioned above, or to request a catalog showing our many other quiet cooling products.

We manufacture a complete line of equipment and enclosure coolers designed to make the designers' and installers' jobs easier.

See us on the Web at [www.activethermal.com](http://www.activethermal.com).