

## Re: microwave oven power cooking levels?

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**From:** Repeating Rifle (*salmonegg\_at\_sbcglobal.net*)

**Date:** 12/09/04

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in article 41b7823f@clear.net.nz, wave at wave@waving wrote on 12/8/04 2:38 PM:

> *Have spent over 2 hours trying to find out if most or all microwaves do true*  
> *variable power output as opposed to the traditional cycling on & off to*  
> *attain different power levels, panasonic call this inverter technology, they*  
> *make it sound like they are the only ones that do it, have not been able to*  
> *determine if this is so yet, I searched webpages as well as the newsgroup*  
> *archives but frustratingly I could not find the answer to what I would have*  
> *thought would be a common question.*  
>  
>

I was intrigued by this and other posts on the subject. Here is what I conclude off the top of my head. I may be wrong in part. It sure is difficult to glean specific information from the Panasonic web pages.

The inverter substitutes high frequency electronic switching and a SMALL transformer for a much heavier magnetic transformer to provide the high voltage necessary to operate a magnetron. The switching also allows varying the voltage applied to the magnetron. In turn, that varies the magnetron's output level. A conventional transformer's output voltage is not easily changed. The down side is that efficiency is reduced somewhat, especially at low cooking level. That is, a larger fraction of the electrical power you pay for ends up heating things other than food you are trying to heat.

Running transformers at high frequencies, what the inverter does, reduces the size and weight required to handle large powers. The cost of electronic devices such as transistors has dropped as manufacturing techniques improved. Magnetic components such as transformers have not dropped much, if any, in price. To a large extent, cost and size for these components vary together.

Bill