

sci.electronics.design: Re: Question: simple inverter to fire up a switch mode power supply?

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From: Mac (foo_at_bar.net)

Date: 12/14/04

Date: Tue, 14 Dec 2004 06:03:56 GMT

On Tue, 14 Dec 2004 15:42:40 +1100, Walter Lolham wrote:

> *Hi there,*
>
> *I am not an electronics guru, just know enough to be dangerous and need*
> *some help on the following.*
>
> *In a switch mode power supply, in the first stage the 110/240 volts*
> *mains power goes into a bridge rectifier and becomes DC and gets*
> *filtered by a large capacitor giving around 150 -> 350 volts DC.*
>
> *Now to use such a power supply say with a 12 volt battery, an inverter*
> *would be the easiest solution. But since inverters are not very*
> *efficient (heat, loss in the transformer etc), do you think if the*
> *following solution could work?*
>
> *If I oscillate the 12 volt (similar to an inverter), but rather than put*
> *it across a step up transformer, instead I feed it into a diode/cap*
> *bridge to multiply the voltage N times to give me the required voltage*
> *(say around 180 volts) to charge the large cap in the primary stage of*
> *my switchmode power supply. Given the current is sufficient, do you*
> *think it could work?*
>
> *If it does, advantage is that it will be much simpler, cheaper and*
> *smaller to build inside the box, on top of being more efficient.*
> *Secondly when there is no load or if the load is minimal, battery*
> *consumption will be next to nothing as opposed to an inverter which*
> *still has to chop the primary of a relatively large transformer, which*
> *in theory is a load in itself.*
>
> *Any thoughts/suggestions would be appreciated. If you know of a suitable*
> *circuit that you could point me to, I'll appreciate it even more.*
>
> *Regards,*

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