

The AbZorber MKII

The AbZorber mains filter was the subject of a glowing review in the March 2013 issue of *Hi-Fi World* magazine by Paul Rigby. We asked the designer of AbZorber, Ben Duncan, to give a little more insight into the filter's ability to capture 'inverse' mains spikes – spike activity within normal mains voltages.

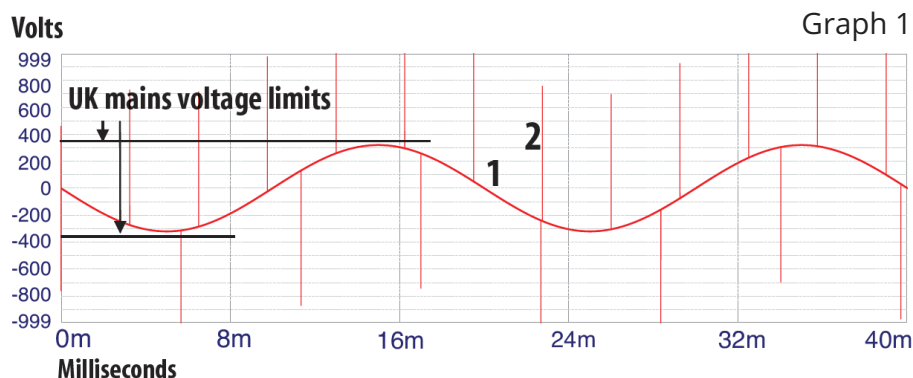
Measurements of mains borne 'spikes' are difficult to make, even with very elaborate gear, owing to their randomly-timed occurrence and fleeting, extremely high speed behaviour.

The only alternative is simulation using the industry-standard Spectrum Software's Micro-CAP 10. Here, the spikes are shown thicker than they actually are, to improve clarity.

In Graph 1, the red wavy line 1, a sine wave, shows the UK mains voltage, with an ideal wave shape (for simplicity), viewed over two cycles, which lasts 40ms = 0.04secs = 1/25th of a second. The voltage scale on the left is in volts.

The black horizontal lines show the normal, positive and negative peak limits of the AC voltage, around + and - 340v, correct for the more commonly cited rms value of around 230 to 240v.

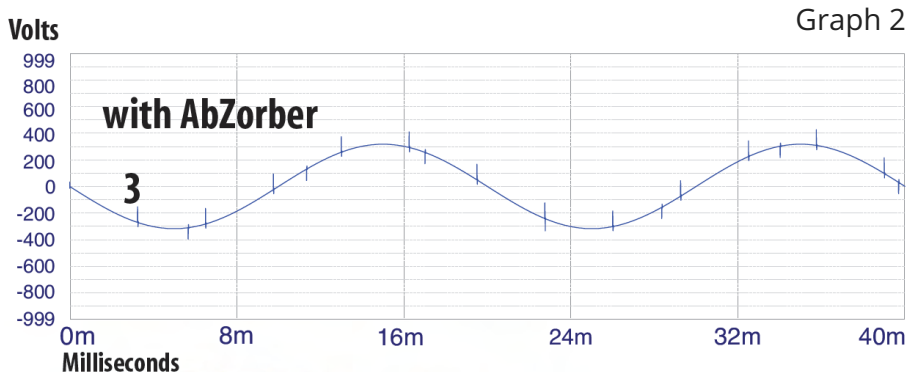
The vertical red lines 2 represent spikes (impulses, transients) of 1000v (1kV) of both polarities, + and -. As these ride on top of, and so add to the mains voltage prevailing at the instant that they occur, some easily exceed the graph scale.



In Graph 2, plot 3 is a simulation of how The AbZorber has simply 'gobbled up' most of the spikes – to a far greater degree than a simple VDR (Voltage Dependent Resistor). Note that the spike activity is reduced even within the UK mains voltage limits. As far as we are aware, no other product does this.

The results on sonic quality in high resolution audio systems can be very marked if spikes are present on the user's supply.

The AbZorber is synergistic with the Mains Zapperator, which provides further damping and 'cleaning'.



The AbZorber MKII. Order Code 1445

The design of the AbZorber was in part inspired by the work of the late Les Sage - who first identified the incapacity of VDRs to always maintain clamping on inverse spikes - just before his death, in the late 1980s.