

ABSTRACT

The invention provides a method of generating an input current to an electronic load at a power factor at or approximately unity including providing an input
 5 voltage to said load; sampling said input voltage to said load in a processing device at predetermined intervals to determine the amplitude A required for producing at the output of said processing device a discrete time switching signal sequence related to determined value A and switching points k by the relationship :

$$10 \quad P(k) = PWM_{max} \left\{ 1 - A \left(\sin \frac{k\pi}{K} \right)^{\frac{1}{N}} \right\} \quad k = 0, 1, 2, 3, \dots, K$$

where PWM_{max} is the maximum duty cycle of the switching sequence and K is the number of samples, switching the input voltage to said load using the switching signal sequence to generate the input current, and selecting the value of N when producing the switching sequence such that the waveform of the
 15 generated input current is in or approximates a sinusoidal form.

FIGURE 1