

## **“Hysteretic Buck Converters with Spur-Free Control”**

### ABSTRACT

A spur-free control scheme for hysteretic power converters that results in a spur-free switching noise spectrum irrespective of the actual switching frequency of the converter is introduced. The proposed control scheme enables powering noise-sensitive loads directly from hysteretic converters without requiring the rather complicated switching frequency control loops that have been traditionally employed within hysteretic power converters in order to maintain a constant and predictable switching frequency and switching noise spectrum. Therefore, the key advantages of hysteretic power converters, i.e. simple design, cost-effective implementation and fast transient response, can be preserved by eliminating any additional frequency control overhead. A step-down buck converter is used to demonstrate the proposed control scheme.

---