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***SPI-APPNOTES: ENHANCEMENTS FOR RELIABILITY***

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Providing rugged and reliable products to its customers is the single most important thing a manufacturer can do. This article in *SPI-AppNotes* lists several of the key enhancements the company has made to its line of standard switching power supplies. The result is a highly robust and reliable line of products.

***RELIABILITY DESIGNED IN***

SPI Engineering bases its designs on current driven, magnetic devices to obtain pulse width modulation control. Most topologies used are half or full bridge, forward converters. Output sections are comprised of a fully regulated main outputs plus magnetic amplifiers and linear post-regulated auxiliary outputs. These are industry-proven technologies that have become more efficient, quieter, and very reliable over the past two decades. Switching Power Engineering enhances the benefits of these topologies further to increase product longevity and reliability under varying ambient conditions. Here are several ways in which SPI Engineering improves upon the basic single or multiple output power supply topologies compared to a typical commercial grade supply:

- Input and output rectifiers de-rated up to 50% to extend reliability and longevity.
- Reduced minimum loading requirements on the main and auxiliary outputs give users more flexibility in system design.
- Oversized boost chokes in power factor corrected front-end lower core losses and reduce stress on boost FETs, increasing reliability.
- Solid copper heat sinks are used to conduct heat outside the supply faster, keeping power supply components operating cooler.
- Products are packaged in a 360-degree, thick aluminum heat sink/chassis to get heat off the components efficiently and provides a more rigid package.
- Oversized output capacitor banks improve dynamic response.
- Input bulk capacitors are increased to maintain specified hold up time under FULL load and all specified line conditions.
- Products are designed and manufactured with *ZERO-returns goal*.