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A Powerful Concern in Medical Device Design

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When you consider that a power supply is essential to electronics, it is amazing that so many designers wait until the end of the design process to design-in their power source. This is especially amazing today given that so much can be gained in system performance and efficiency, regardless the core technology or end product, by properly integrating the power supply into it. This oversight is not peculiar to any type of engineer or product design, but not properly considering the power requirements early on is damaging to your development effort no matter the level of technology involved.

The advantages achieved by considering the integration of the power system into a design ahead of time at the board level is pretty obvious, as last-minute changes can be catastrophically expensive. That still doesn't mean that every engineer will do so, and even those that do may not consider all factors, such as getting rid of device operating heat or ensuring maximum use of available board space.

At larger scales the issues do not go away simply because one can use an external power supply. The power supply's performance and efficiency are still critical factors, as is the interface between the supply and device. Just because the power supply is external doesn't mean it is immune from size and shape considerations, either. Regulatory approvals and other-environment (from moisture to altitude) performance are important as well. This is especially critical to medical device creators working on battery-driven or remotely-powered devices where every facet of the power system must be compliant.

The important thing to remember is that taking your product's power supply into consideration at the beginning of the design process will pay off tremendous dividends in development time and device performance. In addition, getting the power supply vendor involved early ensures the solution will meet all the latest agency requirements, avoiding delays at later stages of development that can kill or significantly increase the cost of a product.

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