

WHITEPAPER PREVIEW

Understanding and Navigating the Complexities of Health Monitoring for Power Supplies

A comprehensive explanation how to estimate system's health status using Power System Reliability Modeling Solution

Abstract

This whitepaper introduces Infineon's innovative solution, which is designed to transform traditional reliability prediction procedures into the industry's first commercially available embedded power supply health monitoring solution. This approach uses cutting-edge embedded data analytics on real-time telemetry data and a power system reliability model to dynamically recalculate the failure rate of the entire electronic system. This failure rate can be utilized for health monitoring, dynamic failure predictions and data-driven maintenance strategies that significantly reduce downtime and extend equipment lifespan.

The whitepaper provides a comprehensive explanation to health monitoring in electrical systems, with a specific focus on power supplies. **The first chapter** introduces the basics of health monitoring, elaborating on the advanced benefits for the whole system and the challenges faced in implementing health monitoring for power supplies and why it is not very well established in the market. **The second chapter** presents how the novel solutions addresses these challenges through a combination of live failure rate computations through reliability modeling, and sophisticated data logging techniques, ensuring that businesses can maintain optimal performance and safety. In detail, this chapter covers an overview of the solution, the fundamentals of reliability modeling, integration of the reliability model into the controller, calculation of system failure likelihood, powerful system prediction, and the outputs of the solution. **The third chapter** discusses advanced use-cases of Infineon's Power System Reliability Modeling solution, including health status prediction to optimize maintenance and reliability load balancing to maximize the lifetime of power supplies. **The final chapter** offers summary considerations, encapsulating the key points discussed in the preceding chapters.

The full whitepaper is available upon registration, offering a deeper insight into the technology that creates the future of power supply reliability. By downloading the paper, a reader can discover how Infineon's solution provides insights for predictive maintenance, improves system reliability, and offers reliable system predictions, all while being integrated into existing infrastructures. Infineon's cutting-edge reliability modeling unlocks the potential of power systems by meeting the demands of modern industrial environments.

Download the full version [here](#).

Additionally, don't miss our **Power System Reliability Modeling Tool**. Explore [here](#).

It helps you visualize and understand system's benefits better when implementing the Power System Reliability Modeling Solutions.