Case Study

Datakey
The power of memory. Secured.

Data With a Steady Heartbeat

St. Jude Medical

St. Jude Medical, Inc. globally markets its EnSite™ Catheter and EnSite™ Electrophysiology Workstation to electrophysiologists (EPs) – cardiologists with highly specialized training in the diagnosis and treatment of heart rhythm problems. St. Jude's proprietary wire mesh balloon catheter, a non-contact heart mapping system that measures and calculates the electrical fields in the heart.

Applications:
Calibration Data Upload
Limit Use
Firmware Updates

Market:
Medical

Challenge

Compared to traditional single-point contact catheter mapping devices, St. Jude's unique non-contact, 64-electrode balloon design, created by 8 x 8 rows of wires, allows the EP to "look" at the entire "electrical map" of the heart at once, sparing the patient prolonged and repetitive procedures as well as reducing EP procedure time and cost.

"Mass produced for one single use, each catheter is subject to manufacturing variations and must be calibrated with the exact location of the x-y-z coordinates on each electrode, along with other St. Jude proprietary information, prior to being used in patient applications," explained Jeff Schweitzer, Manager of Hardware Engineering, St. Jude.

To accomplish this, St. Jude determined that they needed a secure data transport device with the following attributes:

- Disposable
- Sterilization-resistant
- Fully-engineered to reduce R&D costs and time-to-market
- Long-term availability

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Solution

St. Jude uses a Datakey IST16Kb memory token molded in a special sterilization-resistant composite. According to Mr. Schweitzer, St. Jude chose the Datakey token because they found it was ideally suited for integration. Not only does it meet St. Jude's basic requirements for non-volatile memory, read/write capability, reliability, and ease-of-use, but it also provided an instantly pluggable, customized solution.

"The Datakey package is cheap enough to be disposable," said Jeff Schweitzer. "It also qualifies for the sterilization method we use at St. Jude, which is extremely important. We are especially satisfied with this memory device because Datakey worked with us to give us a perfect custom solution for our calibration needs."

Fully Engineered

In addition to the memory token, St. Jude designed in the Datakey SR4210PCB mating receptacle. This high-cycle life receptacle offers a detent mechanism that gives users tactile confirmation when an inserted token is physically engaged. There is also a token detection contact that may be used to protect the host bus by ensuring that the token's contacts have made secure contact with the receptacle before any signals are transmitted.

St. Jude Chose Datakey

Pluggable, packaged data solutions that meet the stringent requirements of the medical industry for precision calibration, sterility and ease of use are the key to market success.

As Jeff Schweitzer of St. Jude said, "As we develop new generations of our catheter, or begin rolling out future medical product designs, we know Datakey will be ready with a custom package we can plug in and rely on."

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