

# ADI's *iCoupler* digital isolators enable better performance, smaller form factor, and increased reliability in Lantronix new wireless medical devices, replacing older and less reliable optocoupler based designs

Continued innovation in the medical device industry has unlocked a host of new possibilities for collecting and disseminating patient information via the Internet, equipping healthcare professionals with real-time remote access to critical data to help ensure the highest possible levels of



patient care and operational efficiency. Lantronix®, a recognized leader in secure communications solutions, is facilitating this transformation with its new EDS-MD™ **multiport medical device server**, designed specifically for the medical

industry to enable the secure access and management of medical devices spanning patient monitoring systems, glucose analyzers, EKG machines, infusion pumps, and beyond.

Available in 4-, 8-, and 16-port configurations, the wall-mountable EDS-MD medical device server provides multiple Gigabit Ethernet network connections and two USB ports, supports enterprise-grade security protocols (SSH and SSL), and ensures strict conformance with regulatory and safety standards including IEC-60601-1, EN 6061-1-2, and UL 6061-1. High on the list of the EDS-MD system's key distinguishing features is the galvanic isolation that Lantronix's design team applied to each individual port utilizing ADI's advanced *iCoupler*® **digital isolators**. Yielding the highest level

of safety for this class of connectivity devices, the EDS-MD's galvanic isolation feature ensures that grounding failures and malfunctions are contained to a single port and won't compromise the integrity or availability of the EDS-MD itself or the other connected devices.

Each multiport EDS-MD system utilizes ADI digital isolators for electrical isolation of each individual serial port and USB port. These isolators enabled Lantronix's designers to increase the total number of isolated channels, ultimately yielding a 4× gain in data rate and timing specifications compared to **optocoupler-based designs**. By foregoing the use of bulky optocouplers and other additional external components, Lantronix's designers also realized aggressive form factor and system integration goals while minimizing overall design complexity and cost. The resulting reduction in component count yielded a 40% reduction in total board space compared to the nearest EDS-MD competitor, which, in turn, helps conserve valuable bedside real estate at the point of care.

ADI's *iCoupler* **devices** forego the LEDs and photodiodes used in traditional optocouplers and, instead, utilize chip-scale transformers, which support higher data rates and enhance overall reliability. Operating at power levels up to 90% lower than optocouplers, *iCoupler* digital isolators also afforded Lantronix's EDS-MD designers greater agility to meet their power profile targets.

“ADI's *iCoupler* digital isolators help to speed the transmission of critical patient information, enhance the overall resiliency of the EDS-MD system, and meet exacting safety certification requirements.”

**Daryl Miller, Vice President of Engineering, Lantronix**