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Study Published in *JAMA* on RFID Interference Ignores Real-World Use Cases, according to SkyeTek

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News Facts:

- A study published last week in the *Journal of the American Medical Association* reported that RFID systems can cause "potentially hazardous incidents in medical devices" used in hospitals. Unfortunately, the report ignores mainstream passive RFID readers in favor of an uncommonly high-powered RFID reader used at an uncommonly close distance.
- SkyeTek, Inc., a leading provider of passive RFID reader technology, sees the study as making a strong case for the upper limit of passive UHF output power (2 - 4 Watts) around medical devices. However, it is important to note the study does not test for today's most common passive UHF use cases which call for RFID reader output power anywhere from 0.25 Watt to 1 Watt, the maximum allowed by the FCC. By comparison, one of today's most popular cell phone models emits 1.59 Watts.
- The study also ignores the HF frequency entirely which comprises a substantial, if not the largest, portion of passive RFID technology used in hospitals today. The potential EMI coming from passive HF RFID readers is significantly less than that coming from their UHF counterparts.

Key Takeaways:

- The passive UHF RFID reader used in the study is an unrepresentative product used unconventionally
    - Although the reader model was not specified in the study, it is most likely the Feig ID ISC.LRMU2000 Fixed UHF Long Range Reader Unit which has a maximum of 3 Watts of output power. The vast majority of passive UHF RFID readers sold today are readers that emit 1 Watt or less of output power at the antenna (ie, not including antenna gain).
    - The reason why the industry has standardized around 1 Watt is straightforward:
        - 1 Watt is the maximum UHF RFID output power as specified by the FCC in North America as well as several other major countries around the world.
        - Readers capable of 1 Watt are capable of reading RFID tagged inventory and assets several meters away – plenty of range for the majority of tracking applications
    - In the event that a 3 Watt reader is necessary, the presumption is that there is a requirement to track items well in excess of the 5m – 10m that a mainstream 1 Watt reader is capable. Yet, the study finds the vast majority of its EMI at 0.5m or less, distances for which a 3 Watt reader would not realistically be used.
- The study also ignores passive HF RFID, which is a substantial, if not the dominant, type of RFID used in hospitals.
    - HF RFID operates at 13.56 MHz, typically operates at lower power levels than UHF, and uses the magnetic portion of the radio wave to communicate between reader and tag.
    - These characteristics make HF much less susceptible to EMI with adjacent devices than UHF.
    - This is the same technology used for security badge access into office and buildings.

Quotes from Rob Balgley, CEO of SkyeTek

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- "We feel it is important to provide clarification around the results of this study because RFID continues to drastically improve patient care in the healthcare industry."
- "While the results do a good job of indicating a limit to the amount of RF power applied around medical devices, the test did not account for the most common uses of RFID today."
- "On top of that, none of our experiences with readers used in hospital deployments are near the amount of power that the readers in this study required. If you wanted to show EMI due to passive RFID, you would go out of your way to pick the reader that was used in the study. If you wanted to represent the market, you would have chosen a lower powered reader."
- "Despite its flaws, we do see the study as a call to action for standardization around RFID in hospitals, particularly as it relates to power requirements. This would certainly benefit the industry in the long run providing a commonly understood framework for how best to employ RFID in healthcare."

For detail on other studies on RFID and its use in healthcare environments, please visit http://www.wirelesshealthcare.co.uk/wh/news/wk29-08-0003.htm.

Please contact Kristin Cronin to arrange for further quotes regarding this study or to request an interview with a SkyeTek executive.

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About SkyeTek, Inc.

SkyeTek, Inc. develops reader hardware and software that enables the pervasive adoption of RFID as intelligent networking technology. Numerous Fortune 500 and mid-market customers use SkyeTek's products in applications such as item-level inventory, product authentication, access control, and patron management. In addition to selling SkyeModule readers, SkyeTek licenses SkyeWare software that allows customers to save 40 – 70% compared to the price of common reader modules available in the market today. Based in Westminster, Colo., SkyeTek sells exclusively through OEMs, systems integrators, and distributors. For more information, visit www.skyetek.com.

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