

# High-Performance Radio Frequency ID Tags Work Near Water

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The performance of ultra-high frequency (UHF) radio-frequency identification (RFID) tags usually degrades significantly when they are placed near water or metal, where read distances typically fall from a normal range of 15-20 feet to 5 feet or less. To solve this problem, a researcher at the University of Kansas-Lawrence has invented a new antenna that corrects this interference.

Professor Dan Deavours, Ph.D., director of research at the RFID Alliance Laboratory at the University of Kansas, developed the microstrip antenna device for RFID tags over a two-year period from 2005 to 2007. About \$100,000 in funding was provided by the Kansas Technology Enterprise Corp. through internal commercialization grants.

“ *The technology involved developing an ultra-thin microstrip antenna to replace the dipole antenna that is typically used in RFIDs.*

Traditional microstrip antennas require an electrical connection between the top and bottom layer of the antenna. This

new microstrip antenna eliminates the need for that connection and can also be more easily manufactured, without the need for drilling holes, wrapping or other methods of connection.

The microstrip antenna for RFID device is an innovative solution that overcomes the “metal/water problem” associated with UHF RFID by creating a thin, higher-performance tag that is lower cost and more easily manufactured than standard tags.

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