

# **RuBee (IEEE P1902.1) Fact Sheet**

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### *Asset Visibility In Harsh Environments With No Change in Process*

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- RuBee is an active, wireless, asset visibility technology that uses magnetic waves. RuBee is not RFID.
- RuBee works in harsh environments and is not affected by water. Steel can actually enhance the RuBee signal, and extend the range.
- RuBee is volumetric: it is not line-of-sight. Tags may be read on steel shelves with hundreds of stacked boxes, in a wallet anywhere in a room or by a door, on laptops or weapons inside an aluminum case, even embedded in steel tools inside steel tool boxes.
- RuBee tags have a range of a few feet to over 50 feet depending on antenna design and tag design. RuBee tags may be as thin as a credit card, and as small as two stacked quarters.
- Dumb RuBee tags have a single address ID.
- Smart RuBee tags have a programmable micro processor, with crystal clock for date and time, 10+ years battery life with a thin coin-sized Lithium-Ion battery, optional sensors, and optional SRAM memory up to 5Kbytes.
- RuBee tags are always cost-competitive with other wireless visibility technologies.
- RuBee has no known human safety issues and has no known risk to ICD or pacemaker wearers. RuBee is many millions of times below OSHA limits for safe human RF exposure (RuBee = 40 nanowatts RF) and is 5 to 10 times below field levels in retail antitheft systems seen all over the world (RuBee = 600 mGauss magnetic).

- Because of its low power, RuBee has no known intrinsic safety, EMI or EMC issues with munitions, weapons or medical grade equipment that meets IEC 60601-1.
- RuBee has been reviewed by the FDA and is classified as a Non-Significant-Risk (NSR) Class 1 device, for use in Operating Rooms.
- Specialized RuBee tags have passed many extreme tests: 20,000 round endurance testing with a tag embedded in a Sig Sauer P226 pistol; MIL-SPEC 810F – immersed in Jet A fuel and 13 other harsh solvents, placed under water for 24 hours at 66 feet, sprayed with salt water for 24 hours, at -50C and 80C for hours – and they still work. RuBee tags have passed EMI testing for mission critical phone equipment (NEBS).
- RuBee tags have passed stringent security tests, and are in use within some of the most secure sites in the USA where all other wireless technologies (RFID, Wi-Fi, Bluetooth, ZigBee) are banned. RuBee is the only wireless technology that can dynamically manage range to prevent eavesdropping. RuBee cannot be used as a target and does not present a Tempest threat.
- The RuBee protocol is an international wireless standard, IEEE 1902.1 unanimously passed by corporate balloting at the Institute of Electrical and Electronics Engineers (IEEE). IEEE 1902.1, the RuBee protocol and RuBee applications are all available for licensing.
- RuBee Visibility Systems are used in Weapons, Livestock, Healthcare, Fleet Management, and Mission Critical Tools, as well as many other asset visibility applications

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