

# Tutorial

## Tossing Reliability into the Wireless Sensor Network Equation

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<http://www.senzations.net/>

Wireless Sensor Networks (WSNs) face the challenge of ensuring end-to-end communication while operating over individually unreliable wireless links and connecting a large amount of highly resource constrained, highly heterogeneous set of nodes. Understanding the constraints related to these tiny devices are well as the overall behavior of the wireless link is crucial in order to design robust communication protocols.

The aim of this talk is to expose an academic audience to the cutting-edge R&D challenges associated with implementing communication protocols on the latest hardware. During this tutorial, we will explore the key characteristics of a WSN using the Texas Instrument eZ430-RF2500 platform.

After introducing the key concepts inherent to embedded programming (interrupts, timers, I/O), we will evaluate the importance of CRC, measure the evolution of reception power with distance, implement our own preamble sampling MAC protocol, etc, before building our very own wireless sensor network. The presenters will provide attendees with the hardware and software platforms, as well as the necessary code snippets.

With an expected market size of approximately \$2b by 2012 at a compound annual growth rate of 41.9%, these networks are gaining seriously in momentum in both the academic and industrial communities. It is hence anticipated that this talk will be very well attended.

Win

eZ430-RF2500 kits during the programming challenge immediately following the tutorial!

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Thanks!

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