MoteStack: Low-power, low-cost, high-fidelity remote sensing

Description:

Remote sensing is an industry that has exploded over the past few decades as a result of high demands for bettering agriculture, food and habitats. Different types of sensing systems have been designed; however, they lack the ability to be employed on a large scale and with minimal power usage. Additionally, other systems are not able to be self-sufficient and left for long periods of time. The MoteStack offers a solution to these problems.

The MoteStack is a hardware architecture and reference platform family for constructing large-scale, long-lived, wireless data acquisition networks. The device is designed to enable data collection, data processing, data storage, and data communication across a broad range of sensor, storage, and communication technologies. When deployed at scale, the devices form an intelligent sensing fabric that can cover a large geographic area with minimal power requirements at a low cost. While the architecture was originally conceived to suit the requirements of the Intelligent River ™ program, the architecture and its platform realizations provide value to a range of industry segments, from agriculture and utilities to defense and manufacturing.
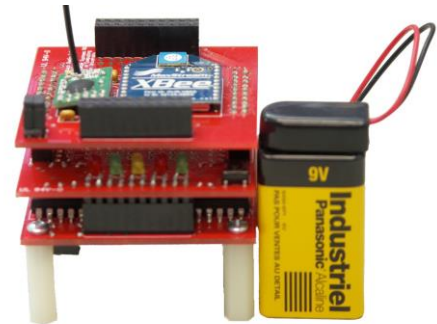
Figure 1: Motestack 3.x

Applications:
- Remote Sensing
- Precision Agricultural
- Habitat Monitoring

Benefits:
- Low power
- Low cost
- Extensive network capability

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