

## Micro-Wireless Integrated Environmental Sensor and Transmitter System

**R**esearchers at the University of South Florida have developed a circuit in which sensor and communication functions are integrated as a single function.

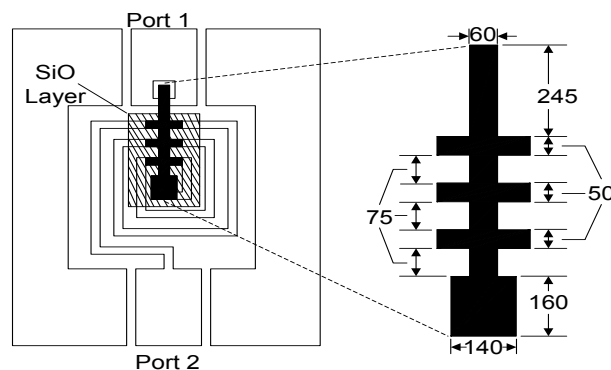
Data sensors provide versatile functionality to nearly every major industry. They yield status information, allowing for the performance of various control functions, and often defining the means by which various elements communicate. Developers have been finding new ways to incorporate data sensors to increase functional flexibility by implementing sensor technology with communication systems. This then allows for wireless and remote sensing capabilities. However, these new ways have been limited by the split architecture approach whereby sensing and communication are performed separately due to process tolerance and fabrication limitations. Due to the inefficiency of the split architecture approach, there is a need to combine the sensor as part of the radio frequency communication circuit to increase the efficiency. This will then increase the applicability of the sensor communication platform.

Inventors at USF have developed a wireless integrated micro-system for wirelessly transmitting environmental data at radio frequencies. The current invention is a sensor system comprising of radio frequency integrated circuit means adapted as an environmental micro-system for the sensing of environmental stimulus and communication. The overall system combines sensor and communication functions as one. This provides data for the surrounding environment in which the system is employed or in use.

### ADVANTAGES:

- Environmentally sensitive
- Scalable to attain a higher or lower frequency of operation
- Integration of communication and sensor function
- Flexible modification based on stimuli

### *Integrated Environmental Sensor and Transmitter Functions*



### *The Micro-Wireless Integrated Environmental Sensor Element*