The Wi-Fi Detector Ring

About the Project

The Wi-Fi detection ring was developed to give mobile computer users the ability to detect 802.11b/g signals, while providing a unique, fashionable and ultra-portable product package.

The prototype circuit collects and rectifies an RF signal in the 2.4GHz range, whereafter an Atmel Tiny microCONTROLLER (oops, original post said 'microPROCESSOR'), detecting the presence of a DC voltage, thusly engages a flashing LED.

Due to the simplicity of the circuit design, the prototype unit does not discriminate between other sources of 2.4GHz RF, eg. "leaky" microwave ovens, cordless phones, etc. Future production units would feature surface-mounted components to decrease the detector profile and microcontrollers that discriminate between other RF sources, as well as indicate whether the Wi-Fi nodes are open/closed/encrypted, etc.

Looking at the prototype image, yes, it does look like a dogs breakfast. However, future iterations will have a bit more care put into the physical design and layout. The 3D concept and mockup images demonstrate the future direction of the product design.

The maximum detection range appeared to be roughly 40 feet (line of sight), which is not exactly great, but this can likely be blamed on the antenna and the lack of a sensitive tunnel diode, which a future improved version will both utilize.

Images
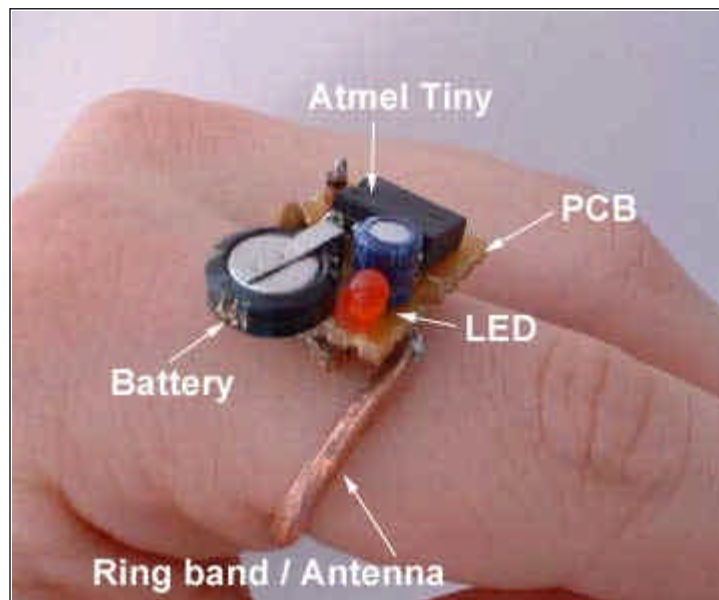
Wi-Fi Ring prototype layout
(Not shown on the underside: a crystal and tiny on/off switch.)

3D Concept 1 - **3D Concept 2** - **Mock-up 1** - **Prototype In Action**