



Security Applications of Software Defined Radio

The discovery that an inexpensive digital USB TV tuner can provide the RF signals and digital building blocks to build Software Defined Radios (SDR) led to an amazing number of applications that experimenters have developed over the past few years. Our panel of speakers, who are all Amateur Radio aficionados, have been exploring the security aspects of SDR technology in various settings for the last year. At this meeting, Joe Jesson will provide an overview of RF monitoring, beginning with the NSA's TEMPEST project from the 1960s. He will also explain how the TV tuner SDRs and some of the more expensive monitoring devices (such as airSPY and HackRF) work. John DeGood will discuss applications, including his own Raspberry Pi + RTL-SDR receiver that decodes 1090 MHz ADS-B and Mode S transponder beacons from thousands of aircraft every day and uploads the real-time aircraft position data to multiple flight tracking websites. Rebecca Mercuri will give a general description of software and experimentation resources available for the RTL-SDR tuners, and will also give a quick tutorial on how to get started with your own system.

SPECIAL NOTE: A limited number of RTL-SDR USB tuners with additional BNC antenna adapters will be available for purchase at this meeting. The cost will be \$30.00, payable at the time of pick-up. Please email Rebecca Mercuri at mercuri@acm.org if you would like to reserve a tuner/adaptor set.

Joe Jesson (KC2VGL) is currently Visiting ECE Professor at The College of New Jersey and Chief Technology Officer of Assurenet and Able Inc. He was an Edison Award winner while he was CTO with General Electric. Joe has many years of RF and Embedded Systems experience and collects and restores Cold War communications equipment.

John DeGood (NU3E) is a Principal Member of the Engineering Staff at the Lockheed Martin Advanced Technology Laboratories. John has many decades of embedded and high performance computing experience and is an active experimenter in digital amateur radio communications.

Rebecca Mercuri (KA3IAX) is the lead forensics expert at Notable Software, Inc., where she provides digital investigative services and testimony for a broad range of legal matters. Rebecca's diverse collection of eclectic oddities includes a punchcard voting system used in the 2000 Florida Presidential election and a vintage RCA therein.

Date:	Thursday, February 18, 2016, 8:00 pm. (Refreshments and networking at 7:30 pm.)
Place:	Small Auditorium, Room CS 105 Computer Science Building, Princeton University
Information:	Dennis Mancl (908) 285-1066
On-line info:	http://PrincetonACM.acm.org

All Princeton ACM / IEEE-CS meetings are open to the public. Students and their parents are welcome. There is no admission charge, and refreshments are served.

A pre-meeting dinner is held at 6:00 p.m. at Ruby Tuesday's Restaurant on Route 1. Please send email to princetonacm@acm.org in advance if you plan to attend the dinner.