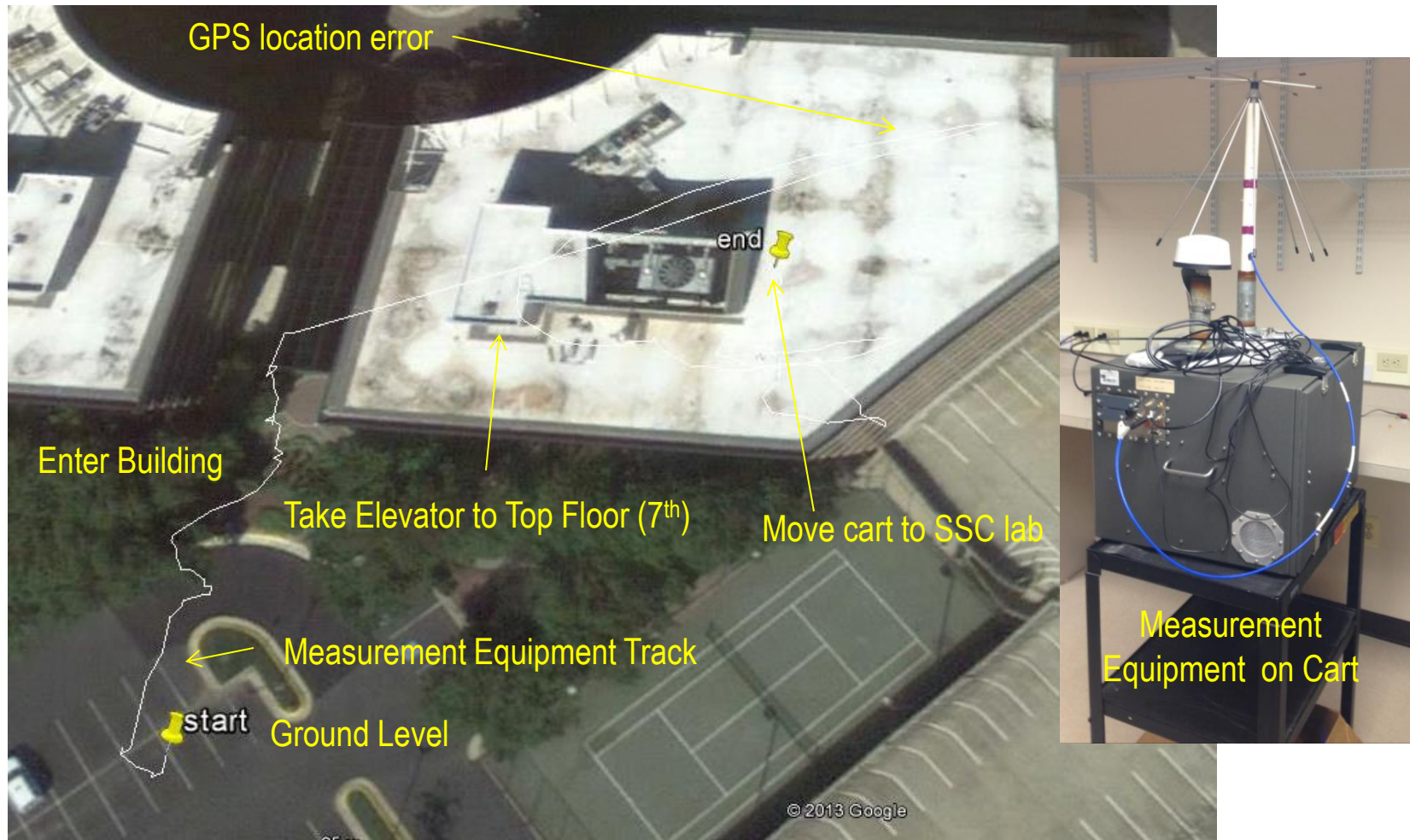

Indoor vs. Outdoor Man-Made Noise Measurements

**Presentation to:
Radio Spectrum Pollution:
Facing the Challenge of a Threatened Resource
November 14, 2013**

**Mark McHenry
Shared Spectrum Company
mmchenry@sharedspectrum.com**

Noise Measurement Locations and Equipment

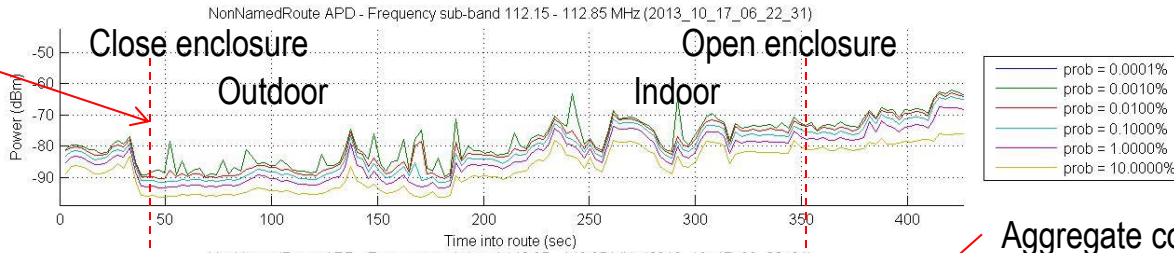


Measurement Date: October 22, 2013

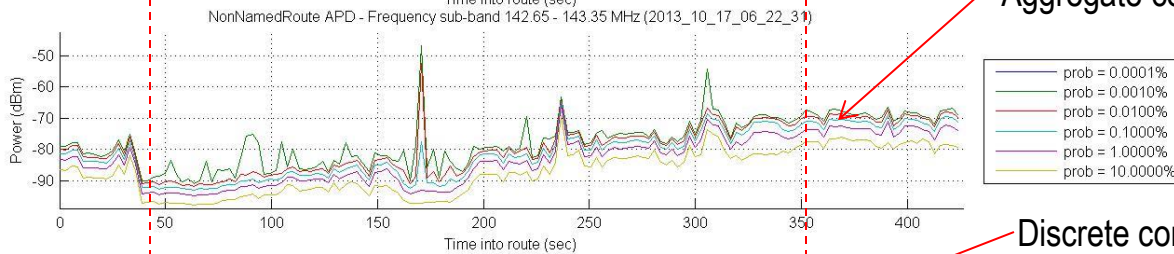
Noise Summary (112 MHz, 143 MHz, 221 MHz, 244 MHz)

Valid data is when the enclosure is closed

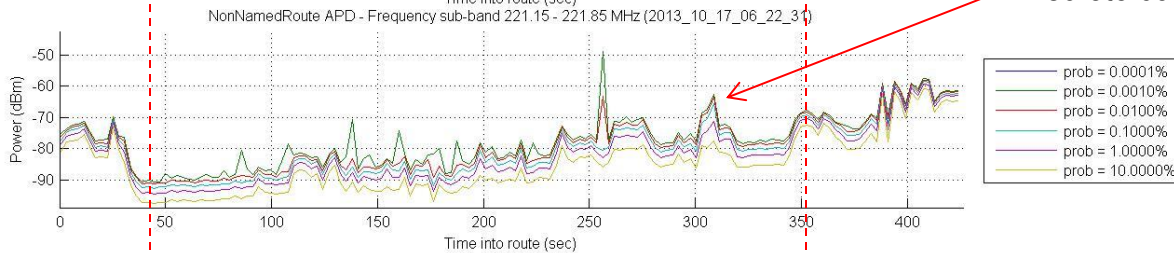
112 MHz



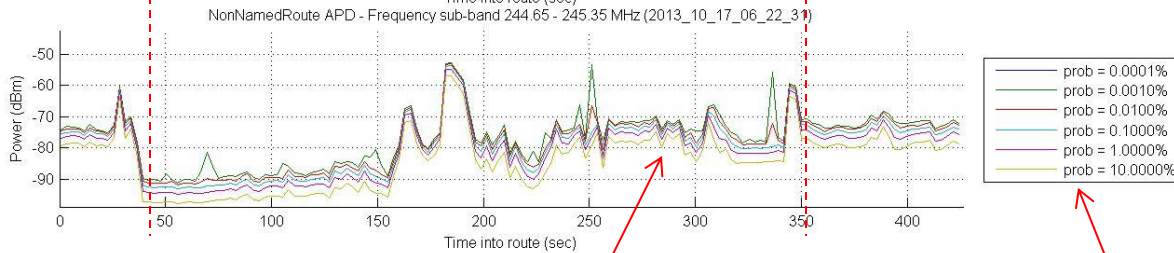
143 MHz



221 MHz



244 MHz

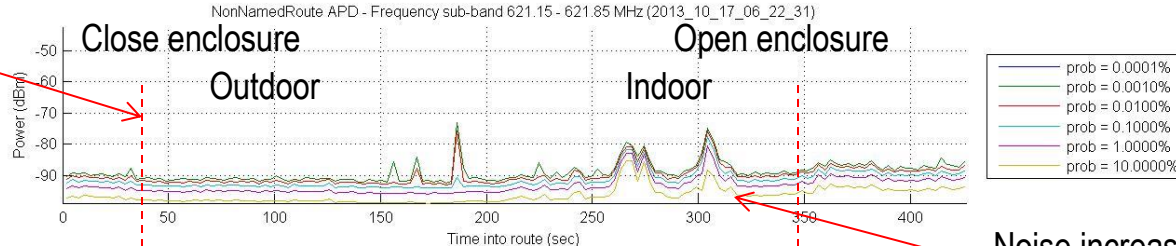


Different APD detector values

Noise Summary (621 MHz, 1227 MHz, 1575 MHz)

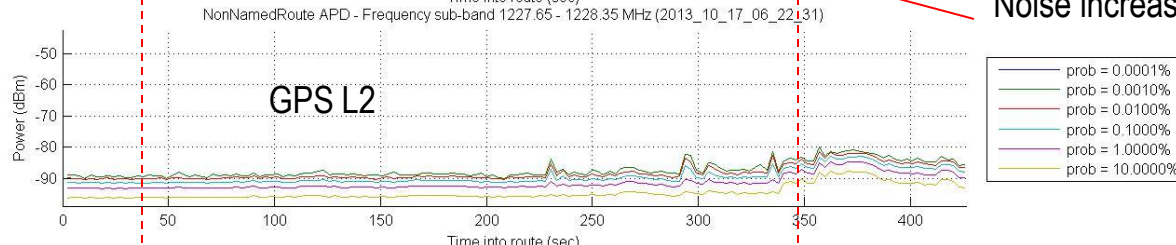
Valid data is when the enclosure is closed

621 MHz

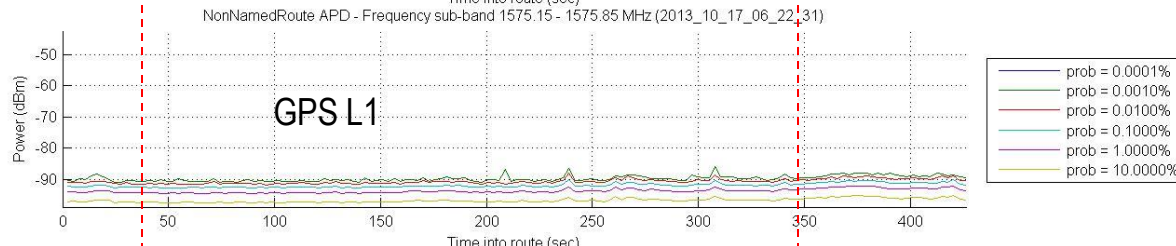


Noise increases indoors

1227 MHz



1575 MHz



- Average noise levels are much higher indoors versus outdoors
- Indoor noise has an aggregate component and device specific component
- Significant noise in important spectrum bands
 - TV band (soon to be auctioned), GPS