

Supplemental Statement of Northeastern University College of Engineering STA File Number: 0067-EX-ST-2021

These experiments will be performed with the transmitters at a fixed location on the Northeastern Campus in Boston. Two transmitters will be used: a Virginia Diodes – MixAMC 346 and a custom-built unit from CalTech JPL. Both will use a combination of amplitude and phase modulations at bandwidths up to 2 GHz. For the Virginia Diode unit center frequencies will be in the range 123.5-140 GHz and for the JPL unit the center frequencies will be 210-225 GHz. Thus, even at maximum modulation bandwidth, the spectrum occupied will be entirely in the ranges 122.5-141 GHz and 209-226 GHz. Therefore, this experiment will avoid overlapping any bands with only passive allocations.

Transmitters:

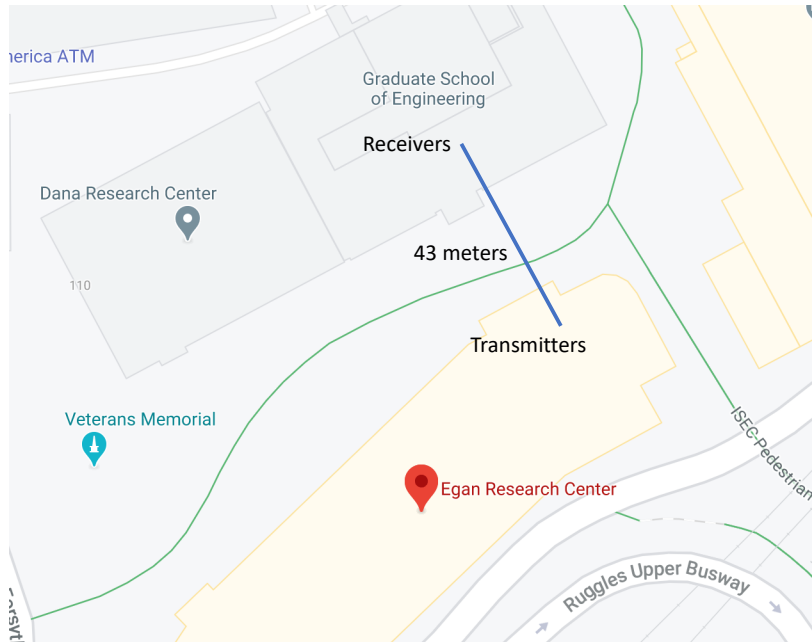
Specifications:

- Set 1:

- Vendor: Virginia Diodes – MixAMC 346
- Frequency: 122.5 — 140 GHz
- Power: 20 mW (13 dBm)
- Antenna: Horn + lens antenna with 40 dBi

- Set 2:

- Vendor: NASA JPL – Custom Design
- Frequency: 209 — 226 GHz
- Power: 200 mW (23 dBm)
- Antenna gain: Horn + lens antenna with 40 dBi



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