

Antenna height and site information

In this exhibition, the details of the site locations and some testing information have been presented. We are seeking an experimental license for our site at Middleborough, MA.

1- Middleborough, MA

Figure 1 and figure 2 show the satellite map of the Middleborough site and antenna test tower of the Middleborough range respectively.

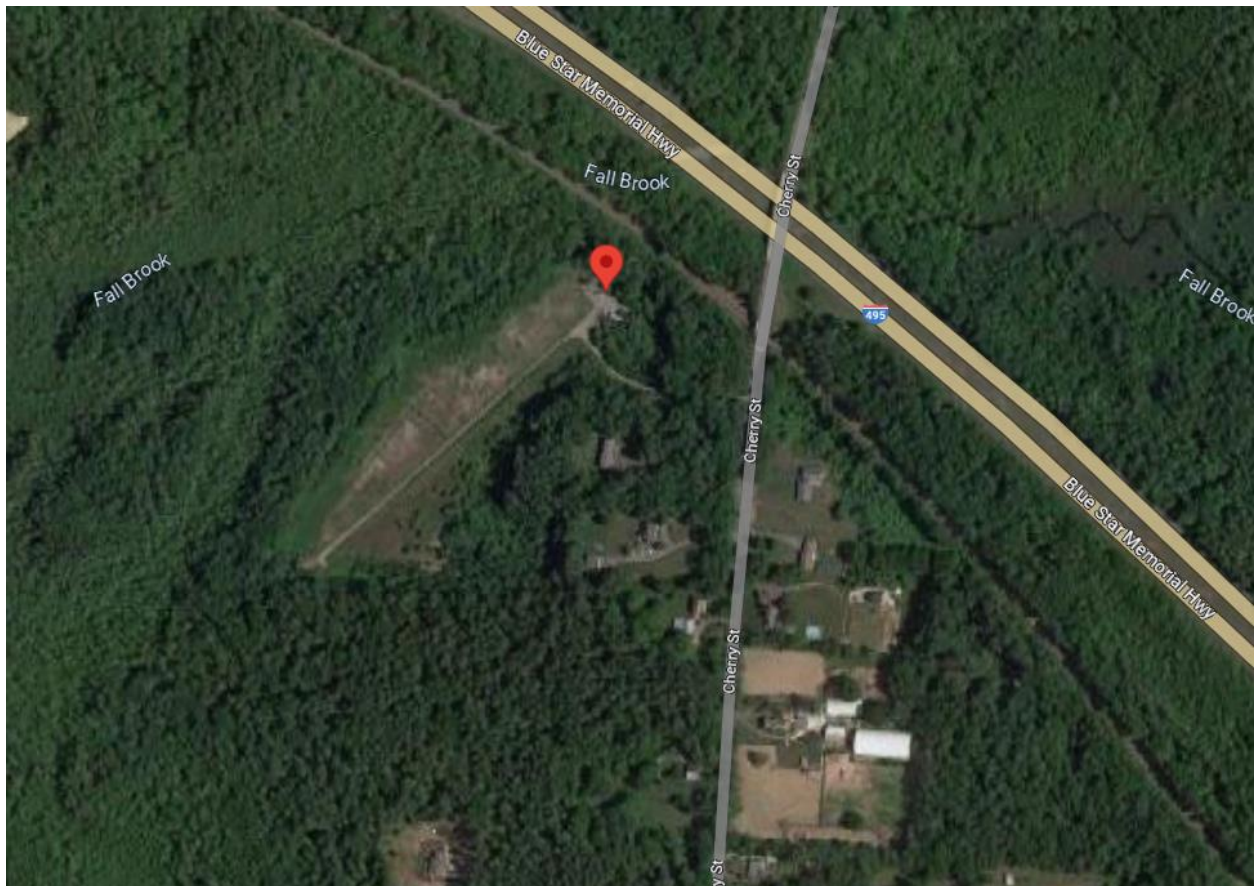


Figure 8. The site Satellite MAP view.



Figure 9. Middleborough site with the antenna test tower.

The tower is about 6 meter tall with about 1.6-meter extension mast to put the antenna on totaling with about 7.6 meter.

The antenna's position on the tower flexibility allows us to adapt its direction and coverage to comply with any regulations or operational restrictions that may be in place as instructed by the FAA pre-coordination.

As per FAA pre-coordination the sector blanking will be from 221 degrees to 15 degrees, reference to true north.

Here are the distances of airports close to Middleborough site.

- 12 km from Myricks Airport
- 22.5 km from New Bedford Regional
- 14.5 km from Plymouth Regional
- 18 km from Cranland Airport
- 30.5 km from Mansfield Municipal Airport
- 45 km from Cape Cod Airport
- 43.5 km from Norwood Memorial Airport
- 56 km from Logan International Airport

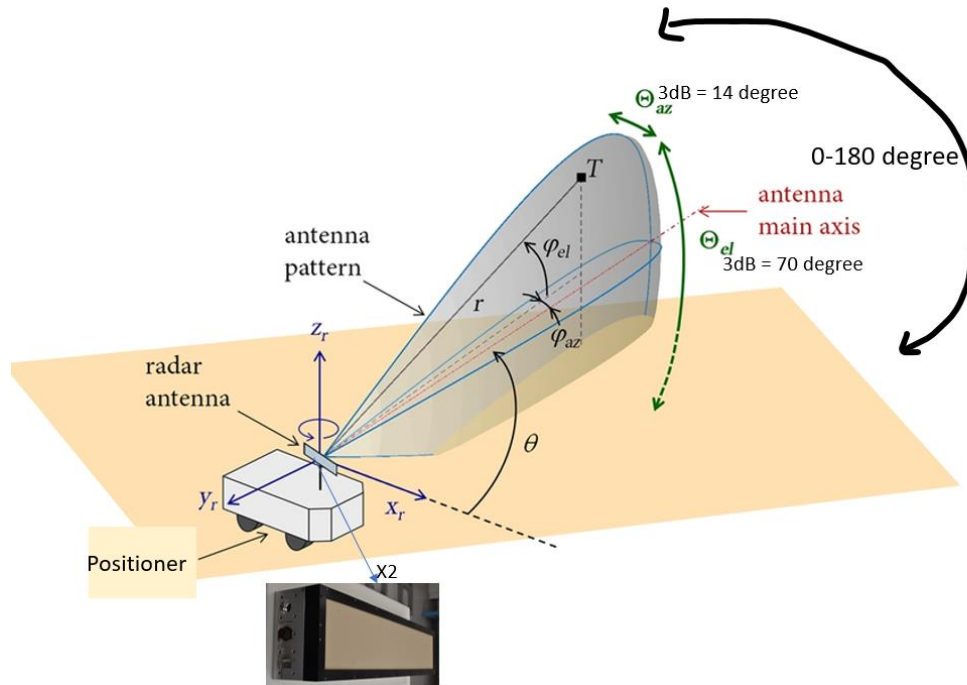


Figure 3 Theory of antenna pattern: Each beam of one AESA has 14 degree beamwidth (3dB) in Azimuth and 70 degrees beamwidth (3dB) in Elevation, Each AESA can scan ± 45 degrees and by utilizing two AESA we will be able to scan 180 degrees. The whole system is also tilted 15 degrees above the horizon ($\theta = 15^\circ$)

The antenna we are proposing for this experiment is designed to scan a wide range of 180 degrees in azimuth (consist of two AESA antenna each covering ± 45 degrees) and 70 degrees in elevation. Furthermore, the antenna is tilted at a 15-degree angle from the horizon. This unique configuration allows for improved coverage and performance in various scenarios.

During the experiment, we intend to demonstrate the antenna's ability to dynamically scan the specified 180-degree azimuth range. It is worth noting that we will be able to adjust the antenna's direction within this range to avoid any restricted areas as required by regulations or guidelines set by the FCC.