

Question 7 – Purpose of Experiment

Experiments in Compact Low Frequency Antenna Design

Michael J. Polia would like to engage in antenna design and testing in the region of 472 KHz – 478 KHz.

The goal is to study the feasibility and efficiencies of partial wavelength antenna structures with an emphasis on antenna current phasing relative to antenna position AGL.

This experimental license is required to enable the design and testing of height restricted medium frequency antenna systems operating over poor ground conditions. Communication with existing experimental license holders and licensed radio amateurs will be attempted. Any communications attempted will use CW or MFSK-based digital modes. The necessary equipment required such as receivers, transmitters, and antenna tuning devices will be constructed, as well as RF amplifiers not to exceed 20 Watts in output. The antenna systems will be designed and installed at the licensed location to accomplish the purposes of this experiment.

Planned research and experiments include but will not be limited to:

1. Evaluation of experimental antenna designs.
2. Determining effects of various cost reduction techniques on the performance and reliability of antenna designs.
3. Determine by experiment the minimum antenna performance criteria to establish and maintain two way communications over selected paths/distances.

The data and experiment results will be made publicly available through published articles, web postings, and other means of dissemination.

A significant number of experimental stations running significantly more power in this frequency range have been able to operate in this region without impact to primary users.

Respectfully submitted

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