

## Global Optimization Techniques for Optimal Placement of HF Antennas on a Shipboard

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**Abstract :** In this work, radio frequency (RF) coupling between two HF antennas on a shipboard platform is minimized by determining an optimal antenna placement. Unlike the other works, the coupling is minimized not only at single frequency but over the whole frequency band of operation. Similarly, GAO and PSO, are used in order to determine optimal antenna placement. Throughout this work, outputs of two optimization techniques are compared with each other in terms of antenna placements and coupling results. At the end of the work, far-field radiation pattern performances of the antennas at their optimal places are analyzed in terms of directivity and coverage in order to see that.

**Keywords :** electromagnetic compatibility, antenna placement, optimization, genetic algorithm optimization, particle swarm optimization

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