Designing a precision VLF detector with low cost components to enable high density networks

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Abstract

Traditionally long range lightning detection uses high precision commercially available signal processing hardware for the detection and recording of VLF signals. The cost of this hardware makes a high density network prohibitively expensive. This study researched the use of techniques and hardware design to enable the production of a high precision receiver using modern low cost components.   The design allows running as a portable system, tested on land and ship, allowing simple deployment to sites with minimal infrastructure.

The system provides long range and higher density R&D networks for research into strike differentiation.   Data streaming to the cloud, allows processing of the entire continuous waveform, to facilitate research into the ionosphere, including the day/night terminator.

Topic Areas

Lightning Physics, Characteristics and Measurements, Lightning Detection Systems Technology and Performance

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