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(54) **LOW COST COMPACT OMNI-DIRECTIONAL PRINTED ANTENNA**

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(52) **U.S. Cl.** ..... **343/767; 343/770**

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(57) **ABSTRACT**

An omni-directional printed antenna that includes at least two wound slot antenna elements. The spacing between the elements, the lengths of the elements and the feed location of the elements are selected to provide a desirable electromagnetic coupling between the elements that causes the narrow bandwidth of the individual elements to combine into a wide bandwidth while providing an omni-directional radiation pattern. Winding the elements together in this manner also allows different antennas for different frequency bands to be combined as a single antenna in a small space. Further, the printed antenna can be patterned on a copper tape to create a sticker type antenna that can be readily mounted on different surfaces.

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**18 Claims, 9 Drawing Sheets**

