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**Palermo et al.**

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(54) **INDUCTIVE COMMUNICATION SYSTEM AND METHOD**

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This patent is subject to a terminal disclaimer.

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(51) **Int. Cl.**[7] ..... **H04B 5/06**

(52) **U.S. Cl.** ..... **455/41**; 455/11.1; 455/66; 455/101; 455/133; 455/575

(58) **Field of Search** ..... 455/41, 11.1, 66, 455/101, 133, 575, 74, 274, 131, 134, 73, 82; 343/742, 862

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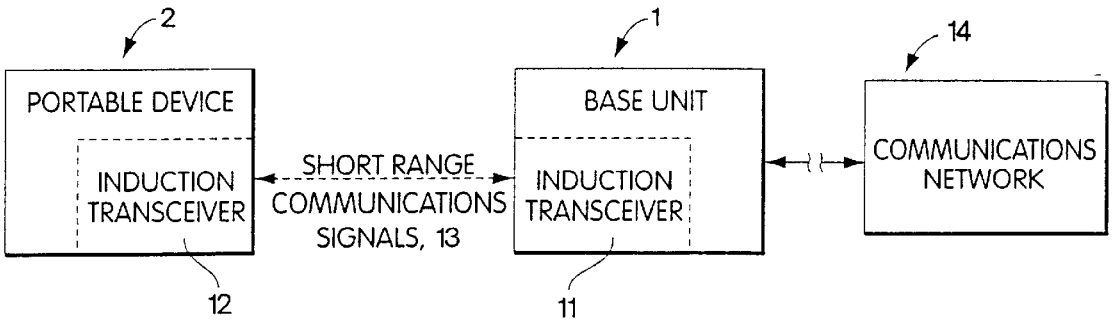
(57) **ABSTRACT**

A system and method communicate signals between a portable unit and a communications system. The portable device communicates with a base unit using inductive coupling. The base unit is further connected to a wider communication system such as a telephone network. Multiple, orthogonally arranged transducers are used in the base unit to provide a more complete magnetic field and to prevent mutual inductance nulls which are otherwise present in a magnetic field. The use of short-range inductive coupling minimizes the power requirements and limits interference with other sources. The inductive coupling may also be used to recharge a battery in the portable device.

**65 Claims, 3 Drawing Sheets**