

Title (en)  
CONTACTLESS ELECTRONIC TRANSPONDER WITH PRINTED LOOP ANTENNA CIRCUIT

Title (de)  
ELEKTRONISCH ANTWORTGERÄT MIT GEDRUCKTE RAHMENANTENNASCHALTUNG

Title (fr)  
TRANSPONDEUR ELECTRONIQUE SANS CONTACTS COMPORTANT UN CIRCUIT IMPRIME D'ANTENNE CADRE

Publication  
**EP 0865614 A1 19980923 (EN)**

Application  
**EP 96939792 A 19961205**

Priority  
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• US 56752095 A 19951205

Abstract (en)  
[origin: WO9721118A1] A hand-held electronic transponder (10) with a printed loop antenna circuit. The antenna circuit is manufactured by depositing on a flat substrate (12) a mixture of discrete conductive particles suspended in liquid, according to a predetermined design. When the suspension medium evaporates, the conductive particles randomly touch one another to establish a conductive pathway. The process can also be used to produce three-dimensional conductor patterns by printing layers (22, 24) of electronically conductive pathways interlaminated with dielectric films. When the conductive pathways on two adjacent layers overlap, a capacitor (14) is created, whose capacitance is function of the surface area of the overlapping conductive pathways (18) and the thickness of the dielectric medium (28) between the pathways. The capacitor can be used to tune the antenna circuit to a predetermined frequency. A resistor can also be introduced in the antenna circuit by adding to the suspension of conductive particles a quantity of particles having comparatively high resistivity.

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