

Title (en)  
Passive entry x-y-z transponder antenna

Title (de)  
Passive x-y-z Antenne für ein Antwortsendegerät

Title (fr)  
Antenne passive x-y-z pour transpondeur

Publication  
**EP 0783190 B1 20011004 (EN)**

Application  
**EP 97100021 A 19970102**

Priority  
US 947896 P 19960102

Abstract (en)  
[origin: EP0783190A1] In a transponder unit adapted to communicate with an interrogation unit by transmitting RF signals to and receiving RF signals from the interrogation unit, a transponder antenna comprising an elongated tubular first ferrite antenna coil (12), oriented to transmit and receive RF signals a first direction parallel to the barrel of said coil; an elongated tubular second ferrite antenna coil (14), oriented at a different angle from said first coil and adapted to transmit and receive RF signals in a second direction parallel to the barrel of said coil; and a substantially flat, planar air coil (10) adapted to transmit and receive RF signals in a direction perpendicular to the plane of said coil, and oriented at a different angle from said first and said second coils. <IMAGE>

IPC 1-7  
**H01Q 21/28**; **H01Q 7/00**

IPC 8 full level  
**H01Q 7/00** (2006.01); **H01Q 7/08** (2006.01); **H01Q 21/28** (2006.01); **G07C 9/00** (2006.01)

CPC (source: EP)  
**H01Q 7/00** (2013.01); **H01Q 7/08** (2013.01); **H01Q 21/28** (2013.01); **G07C 9/00309** (2013.01)

Cited by  
DE102011051456B4; US6937136B2; US11442194B2; FR2812427A1; EP1313169A3; FR2813256A1; EP1083280A3; EP2709074A1; EP0898255A3; DE10160452A1; DE10160452C2; EP1178170A1; FR2812780A1; ES2200652A1; DE10192529B4; EP1136955A3; EP1189306A1; EP0903456A1; DE10162907B4; DE19718423A1; GB2326769A; EP1313168A3; JP2015130566A; US8494600B2; DE102011050129A1; US6799722B2; US6721611B2; WO2004107276A1; WO0211062A1; WO03034349A3; US6809703B2; US10423870B2; DE102011051456A1; US10096902B2

Designated contracting state (EPC)  
DE FR GB IT NL

DOCDB simple family (publication)  
**EP 0783190 A1 19970709**; **EP 0783190 B1 20011004**; DE 69707024 D1 20011108; DE 69707024 T2 20020620

DOCDB simple family (application)  
**EP 97100021 A 19970102**; DE 69707024 T 19970102