

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 A1 19970709 (EN)

Application
EP 97100021 A 19970102

Priority
US 947896 P 19960102

Abstract (en)
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)

Citation (search report)
• [XY] EP 0689301 A1 19951227 - TELEDIFFUSION FSE [FR]
• [A] DE 4105826 A1 19910905 - VALEO SECURITE HABITACLE [FR]
• [Y] DE 2948033 A1 19810604 - JAUCH DR HEINZ [DE]
• [A] US 4278980 A 19810714 - OGITA MINORU, et al
• [A] EP 0350006 A2 19900110 - NEC CORP [JP]
• [A] US 4155091 A 19790515 - VORIE GILBERT C [US]
• [A] GB 1511126 A 19780517 - BENDIX CORP [US]
• [A] EP 0414628 A2 19910227 - KALTNER GEORGE W [US]
• [Y] PATENT ABSTRACTS OF JAPAN vol. 010, no. 046 (E - 383) 22 February 1986 (1986-02-22)

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

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