

## Title (en)

Electronic duplication prevention of keyless entry signal featuring energy conserving method of transmission.

## Title (de)

Die Nachbildung eines schlüssellosen Öffnungssignals verhindern mit elektronischen Mitteln und Massnahmen zur Verringerung des Energieverbrauchs beim Senden.

## Title (fr)

Prévention électronique de duplication d'un signal destiné à une entrée sans clé utilisant une méthode de transmission à faible consommation d'énergie.

## Publication

**EP 0480246 A1 19920415 (EN)**

## Application

**EP 91116342 A 19910925**

## Priority

US 59458290 A 19901009

## Abstract (en)

A remote keyless entry device providing vehicle access which utilizes a friend/foe screening technique comprising an initial sequence of two pulses which precede a transmitted code. The first pulse (24) is transmitted on a 50 kHz carrier frequency while the second (26) is transmitted on a 38 kHz carrier frequency. Once the vehicle receives the pulses, a match is acknowledged permitting the subsequently following transmitted vehicle code to be received and compared to the code stored in the receiver memory (116). The specific vehicle code in the preferred embodiment consists of five integers. These integers are transmitted by the transmitter in serial fashion. Each integer is represented as a time interval between a start and a stop pulse. Each time interval is equal to a fixed increment of time multiplied by the respective integer value. The stop pulse of the first integer is the start pulse of the second and the stop pulse of the second is the start pulse of the third, etc. Once the vehicle receiver receives the sequence of integers, the receiver microprocessor (114) compares the integers received with integers stored therein. If a suitable match is accomplished a logic signal is generated and communicated to the central locking unit (118). A central locking unit which controls individual door access mechanisms then positions the respective mechanisms according to the instruction received therefrom. <IMAGE>

## IPC 1-7

**E05B 49/00**; **G08C 19/24**

## IPC 8 full level

**B60R 25/10** (2013.01); **B60R 25/01** (2013.01); **B60R 25/24** (2013.01); **E05B 49/00** (2006.01); **E05B 65/20** (2006.01); **G07C 9/00** (2006.01); **G08C 19/24** (2006.01)

## CPC (source: EP)

**G07C 9/00182** (2013.01); **G08C 19/24** (2013.01); **G07C 2009/00785** (2013.01)

## Citation (search report)

- [A] GB 2196203 A 19880420 - APT CONTROLS LTD
- [A] FR 1207942 A 19600219 - CFCMUG
- [A] ELEKTRONIK. vol. 34, no. 23, 1 November 1985, MUNCHEN DE pages 99 - 102; PELTZ: 'selektive ir-garagensor-fernsteuerung'

## Cited by

FR2773292A1; EP0668198A4; US5638056A; ES2147148A1; EP0999103A3; EP0768631A1; US5958081A; FR2894743A1; FR2792790A1; CN114084095A; WO2008068394A1; WO9406988A1

## Designated contracting state (EPC)

DE ES FR GB IT

## DOCDB simple family (publication)

**EP 0480246 A1 19920415**; CA 2051952 A1 19920410; DE 480246 T1 19920924; ES 2032740 T1 19930301; JP H04258478 A 19920914; MX 9101495 A 19920605

## DOCDB simple family (application)

**EP 91116342 A 19910925**; CA 2051952 A 19910920; DE 91116342 T 19910925; ES 91116342 T 19910925; JP 26234291 A 19911009; MX 9101495 A 19911009