Title (en)

Wristwatch with atomic oscillator

Title (de)

Armbanduhr mit Atomoszillator

Title (fr)

Montre bracelet avec oscillateur atomique

Publication

EP 2498151 A1 20120912 (FR)

Application

EP 11405232 A 20110309

Priority

EP 11405232 A 20110309

Abstract (en)

The oscillator has a laser diode (1) e.g. vertical-cavity surface-emitting laser (VCSEL) laser diode, emitting a linearly polarized laser beam (11), and a cell (3) placed so as to receive the laser beam, where the cell contains atoms e.g. cesium/rubidium atoms. A detection system includes a photodetector (4) and an amplifier, and is placed to receive the laser beam output by the cell in order to detect a beat frequency obtained by the beam output by the laser diode and transmitted through the cell, and a beam is induced by the Raman Effect within the atoms in the cell. An independent claim is also included for a method for emitting a time signal within a wristwatch by an atomic oscillator.

Abstract (fr)

Oscillateur atomique pour montre-bracelet, caractérisé en ce qu'il comprend un système de détection de fréquences de battement obtenues par effet Raman.

IPC 8 full level

G04F 5/14 (2006.01)

CPC (source: EP US)

G04F 5/14 (2013.01 - EP US)

Citation (applicant)

- EP 0886195 A1 19981223 - ROLEX MONTRES [CH]
- EP 1422436 A1 20040526 - CSEMCT SUISSE D ELECTRONIQUE E [CH]
- WO 2008125646 A1 20081023 - MICRODUL AG [CH], et al
- EP 1852756 A1 20071107 - SEIKO EPSON CORP [JP]
- EP 1906271 A1 20080402 - SEIKO EPSON CORP [JP]

Citation (search report)

- [XYI] US 2002163394 A1 20021107 - HOLLBERG LEO [US], et al
- [E] WO 2011026252 A1 20110310 - SUISSE ELECTRONIQUE MICROTECH [CH], et al
- [Y] EP 1906271 A1 20080402 - SEIKO EPSON CORP [JP]

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2498151 A1 20120912; **EP 2498151 B1 20140924**; CN 102736510 A 20121017; CN 102736510 B 20150930; EP 2738628 A2 20140604; EP 2738628 A3 20140827; EP 2738628 B1 20160106; JP 2012189588 A 20121004; JP 6054613 B2 20161227; US 2012229222 A1 20120913; US 8922283 B2 20141230

DOCDB simple family (application)

EP 11405232 A 20110309; CN 201210124677 A 20120308; EP 14157063 A 20110309; JP 2012049879 A 20120307; US 201213415115 A 20120308