

Title (en)

RADAR SYSTEM WITH MONITORING OF THE FREQUENCY POSITION OF A SEQUENCE OF SIMILAR TRANSMISSION SIGNALS

Title (de)

RADARSYSTEM MIT ÜBERWACHUNG DER FREQUENZLAGE EINER FOLGE VON GLEICHARTIGEN SENDESIGNALEN

Title (fr)

SYSTÈME RADAR À SURVEILLANCE DE L'EMPLACEMENT DE FRÉQUENCE D'UNE SÉRIE DE SIGNAUX D'ÉMISSION DE MÊME TYPE

Publication

EP 3619549 A1 20200311 (DE)

Application

EP 18721274 A 20180409

Priority

- DE 102017207607 A 20170505
- DE 2018200037 W 20180409

Abstract (en)

[origin: WO2018202257A1] The invention relates to a method for a radar system for detecting surroundings of a motor vehicle and implementing a function for driver assistance and/or for autonomous driving manoeuvres, the method comprising the steps: - generating a frequency modulation by means of an oscillator which can be open-loop controlled or closed-loop controlled, - generating a sequence of K0 (K0>1) transmission signals modulated in the transmission frequency, each transmission signal having the same target frequency profile optionally except for a variation of the frequency position, in particular a variation of the initial frequency and therefore synonymously of the centre frequency, - emitting transmission signals using transmission means, - using reception means, receiving transmission signals reflected on objects, - analysing the frequency position of the transmission signals, and - evaluating the received signals, in particular for detecting objects, using signal-processing means. The method is characterised in that the actual profile of the frequency position arising across the K0 transmission signals, in particular the actual profile of the initial frequency, the centre frequency or the medium frequency of the transmission signals, or its deviation from the target profile, caused for example by frequency instability or frequency drift, is determined absolutely or relatively, i.e. up to an indefinite constant amount, wherein - one time-discrete signal per transmission signal is used, each time-discrete signal containing information concerning the frequency profile of the transmission signal and being generated preferably by scanning an analogue signal or by reading out a free-running counter to produce predetermined time points, - these time-discrete signals are denormalised via the K0 transmission signals with respect to the position of their phase and/or with respect to their initial value, and - during an evaluation of these time-discrete signals, a normalisation explicitly takes place or an influence of the position of its phase and/or an influence of its initial value is implicitly eliminated, and dependent on a thus determined actual profile and/or a thus determined deviation of the actual profile from the target profile of the frequency position and/or of a quality measurement derived therefrom, a correction is carried out in the control of the oscillator and/or a correction is carried out in the evaluation of the received signals and/or an adjustment of the function for driver assistance and/or driving manoeuvres is carried out up to the deactivation of the function.

IPC 8 full level

G01S 7/40 (2006.01); **G01S 13/931** (2020.01); **G01S 7/35** (2006.01); **G01S 13/34** (2006.01); **G01S 13/42** (2006.01)

CPC (source: EP US)

G01S 7/35 (2013.01 - EP); **G01S 7/356** (2021.05 - US); **G01S 7/4008** (2013.01 - EP US); **G01S 13/343** (2013.01 - EP US); **G01S 13/42** (2013.01 - EP); **G01S 13/931** (2013.01 - EP US); **G01S 7/356** (2021.05 - EP)

Citation (search report)

See references of WO 2018202257A1

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)

WO 2018202257 A1 20181108; CN 110651197 A 20200103; CN 110651197 B 20231226; DE 102017207607 A1 20181108; EP 3619549 A1 20200311; JP 2020518789 A 20200625; JP 7116071 B2 20220809; US 11709257 B2 20230725; US 2022236406 A1 20220728

DOCDB simple family (application)

DE 2018200037 W 20180409; CN 201880033406 A 20180409; DE 102017207607 A 20170505; EP 18721274 A 20180409; JP 2019545925 A 20180409; US 201916674736 A 20191105