

System and Procedure for Exact Signal Strength and Distance Measuring in Radio Systems

Description

- Invention including a procedure and a system enabling a highly precise distance and position measurement in spaces with multi-path signal propagation
- Existing systems on the basis of signal transit time need complex processing und synchronisation → expensive solution with high energy consumption
- Existing systems on the basis of signal strength only use narrow wave band → less precision and volatile results

Solution

The procedure provides as a solution to use a transceiver (e.g. an FMCW frequency modulated continuous wave), to send a broadband signal, which is mixed with a locally produced frequency ramp of a synchronised transceiver in order to extract a baseband signal with lower frequency. In the next step, the maximum amplitude value is detected by periodic scanning and digitalisation of the envelope. By using common algorithms for transforming signal strength into measures, a precise result can be easily achieved.

Benefits

- ✓ Very precise and resistant against signal disruptions
- ✓ Simple system with less energy consumption
- ✓ Easily to be integrated with existing systems
- ✓ Compatible with common algorithms

Application

Positioning of persons, materials or vehicles in internal spaces consumer electronics , e.g. assistance, AAL or VR, structural health monitoring of buildings

