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研发、设计、测试

基于LabVIEW的汽车防撞报警系统的设计

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摘要 针对交通安全问题，设计了一种基于虚拟仪器的汽车防碰撞报警系统。给出了系统硬件、软件的设计方法和主要实验数据。该系统采用LabVIEW7.0编程，配合FMCW雷达传感器和高性能数据采集卡，可实现对前方车辆距离、速度的动态监测，当预见到有碰撞危险时，自动发出警示信息，帮助驾驶员及时刹车，避免碰撞事故发生。实测结果证明了系统的有效性。

关键词 汽车防撞 虚拟仪器 FMCW雷达 数据采集 报警

分类号

Design of automobile collision avoidance warning system based on LabVIEW

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Abstract

Aiming at the traffic safety，a warning system for automobile collision avoidance based on virtual instrument is designed.The design method of the system and test data are given simultaneously.The procedure is designed by LabVIEW7.0.The system adopts FMCW radar sensor and high-quality data acquisition board.This system can monitor the distance and velocity forward vehicle.It can give the alarm when the collide danger is predicted，and it can assist the driver to brake control，thus some collide accidents will be avoided.The effectiveness of the designed system is verified by some real tests.

Key words automobile collision avoidance virtual instrument FMCW radar data acquisition warning

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