



## **A novel solution for car traffic control based on radiometric microwave devices**

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The significant problem of traffic in big cities, connected with huge and building up quantity of automobile cars, demands for novel strategies, based on nonconventional solutions, in order to improve system traffic control, especially at crossroads.

As well known, the usual solution is based on the time relay, which requires the installation of a fixed traffic interval (signal light switching) at a crossroad; this solution is low cost, but does not account for the actual traffic conditions. Therefore, in the recent years, attention is towards to new designs, where the monitoring of the and control of traffic is carried out by using various methods including, optical, the infrared, magnetic, radar tracking, acoustical ones.

In this work, we discuss the deployment of high sensitivity radiometric systems and radiometers(sensor) in the microwave range [1, 2]. In fact, the radiometer as "sensor" can provide an always updated information about the car traffic in any weather condition and in absence or low visibility conditions. In fact, the radiometric sensor detects the cars thanks to the different behavior of the car roofs which reflect the cold sky whereas the road asphalt is visible as warm object (at around outside temperature).

[1] A. G. Denisov, V. P. Gorishnyak, S. E. Kuzmin et al., "Some experiments concerning resolution of 32 sensors passive 8mm wave imaging system," in Proceedings of the International Symposium on Space Terahertz Technology (ISSTT '09), Charlottesville, Va, USA, April 2009.

[2] F. Soldovieri, A. Natale, V. Gorishnyak, A. Pavluchenko, A. Denisov, and L. Chen, "Radiometric Imaging for Monitoring and Surveillance Issues," International Journal of Antennas and Propagation, vol. 2013, Article ID 272561, 8 pages, 2013. doi:10.1155/2013/272561.