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ABSTRACT

VEHICLE COMMUNICATION SYSTEM USING STAGGERED COMMUNICATION CYCLES TO REDUCE INTERFERENCE

To avoid interference between simultaneously occurring signals and to enable communications by each of a plurality vehicle-installed devices that passes through an area where communication areas overlap each other, a toll collection point of a three-lane express road is provided with a gantry having antenna units provided corresponding to the lanes. The antenna units are controlled so that neighboring units alternately transmit signals. The antenna units transmit signals in predetermined cycle and transmit an unmodulated carrier wave. Upon receiving a signal, a vehicle-installed device generates a response signal by using a control circuit and transmits a signal by reflection, and fixes a communication party for further communications and assumes a status of waiting for an interrogation signal. Upon receiving a pilot signal or an interrogation signal, the vehicle-installed device generates a response signal and starts a timer circuit. When a response signal has been generated and a timer interruption signal from the timer circuit has been inputted, the control circuit transmits the response signal, thus avoiding the conflict with the response signal from the other vehicle-installed device and preventing communication interference.

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