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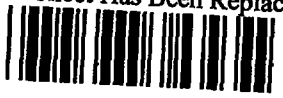

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ABSTRACT OF THE DISCLOSURE

COMMUNICATION SYSTEM FOR VEHICLES

A communication system for vehicles, which obtains exact communication processing with responders mounted on vehicles running on a road having a plurality of traffic lanes, is disclosed. An expressway has three traffic lanes. A gantry is disposed in a specified position on the expressway. On the gantry are disposed antenna units to counter the traffic lanes respectively. The antenna units are provided with communication areas by means of a pair of antenna elements respectively. The antenna element is composed of a microstrip array antenna disposed with eight pieces of patches laid out in two rows with four pieces in each row. The antenna units controls communication processing to communicate with vehicles adjoining each other. When response signals are sent from a vehicle mounted responder, the vehicle mounted responder is fixed and communication processing for toll collection is performed. As a result, communication processing with responders mounted on vehicles respectively which are running in the respective traffic lanes can exactly be performed.