ABSTRACT

Technological developments are very rapid in the era of globalization is very necessary application in transportation, to overcome various problems that occur on the highway such as accidents caused by mechanical problems of the vehicle or the increasing volume of vehicles quickly, especially private vehicles. One of the technologies currently being developed is smartcar using VLC, Smart cars are four-wheeled vehicles that have the ability to automatically regulate internal conditions, are able to communicate with other vehicles and the surrounding environment.

In this final project, a research related to the application of technology based on VLC (Visible Light Communication) as a medium of communication between Prototype smartcar. The data source that is sent is the rear car speed data which is sent to the front car using different distance and angle variations as well as the smoke obstruction, vehicle speed data derived from the HC-020K sensor. Speed data sent by the rear car serves as information for the front car in order to reduce speed or increase speed to avoid a collision, or the information is used for the front car driver to be better prepared to take action in accordance with the received speed data.

From the results of testing the speed data transmission that has been done shows that the system 100% in accordance with the data received. The maximum distance of data transmission is 95 cm and the angle of 20 ° by using an additional lens on the receiver. while the maximum distance of sending data without the addition of a lens is 30 cm and an angle of 45 °

Keywords: VLC, smartcar prototype,V2V Communication