DSRC PHY Issues:

DSRC uses IEEE 802.11p as its PHY and MAC layer, which is, a modicatied modelof the IEEE 802.11a with QoS (Quality of Service). In the PHY layer, thought the communication speed and the range are improved from 802.11a. According to the experiment[1], 802.11p has longer duration between and the OBU and RSU. Besides, the loss of packet is just half compared with 802.11a. But the performance, efficiency and reliability are still limited in the real life, since there are several challenges can effect V2V, V2I(or I2V) communication safety. That is, high speed mobile, buildings, intersections, busy traffic affections. In the [2] mentioned “A higher number of retransmissions for larger packet sizes and a reduced communication range for higher-order modulation schemes” are observed in its experiment. One of the solution of the DSRC PHY issues, is to mount the RSU antenna at the higher position over the car. This can help to improve the performance and reliability over than mount the RSU antenna at the side of road.

[1] **A comparison of 802.11a and 802.11p for V-to-I communication: a measurement study**
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