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Pattern Reconfigurable Antenna With Four Directions Hidden in the Vehicle Roof

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Abstract—Chassis integrated antenna modules offer ten times the space of conventional automotive roof mounted antenna modules and can be fully concealed beneath the roofline. A pattern reconfigurable antenna for 2.6 GHz LTE is measured inside an automotive chassis module. The antenna can be electrically reconfigured to radiate towards the front, back, left or right side of the vehicle. Measurement results show that the antenna retains this ability when being hidden beneath the roof, proving that it is possible and feasible to hide antennas utilizing pattern diversity inside chassis modules.

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