Abstracts

A novel card-type transponder designed using retrodirective antenna array

Shyh-Jong Chung, Ten-Chi Chou and Yung-Nein Chin. "A novel card-type transponder designed using retrodirective antenna array." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 1123-1126 vol.2.

A novel card-type 5.8 GHz passive transponder is designed for possible use in the Dedicated Short-Range Communication (DSRC) systems and/or the RF/ID systems. Four LHCP microstrip antennas are arranged in the transponder by using the Van Atta retrodirective design so that the transponder possesses the advantages of both a high responding signal level and a wide range of responding angles. Measurement results show that the present transponder produces a signal level 12 dB higher than a transponder with single-antenna design, while maintaining the same range of the responding angles as the single-antenna one. Finally, by incorporating 8-bit test codes in the beacon (or interrogator) and in the transponder, the downlink and uplink performances of the transponder are demonstrated.

❑ Return to main document.