Abstracts

Design of a planar array transponder with broad responding beam

Hung-Tu Chen and Shyh-Jong Chung. "Design of a planar array transponder with broad responding beam." 1997 Microwave and Guided Wave Letters 7.9 (Sep. 1997 [MGWL]): 297-299.

A new planar array transponder, including four active receiving-transmitting microstrip antenna pairs, were demonstrated by using the Van Atta array design. The fields retransmitted by all the antenna pairs spatially combine in the wave-incidence direction while interfere with each other in other directions, so that the transponder responds the signal only to the on-line interrogator. The measured 10 dB (5 dB) responding beamwidth for the array transponder is 106/spl deg/(80/spl deg/), which is approximately the same as that of a transponder with a single antenna pair. Also, the measured radar cross section (RCS) patterns for the transponder at the on state (with bias) and off state (without bias) were compared. More than 20-dB difference between the patterns of these two states has been observed.

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