Abstracts

A bi-directionally steering phased array antenna controlled by dual piezoelectric transducers

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A new bi-directionally steering phased array antenna controlled by dual piezoelectric transducers (PET) is presented. This phased array antenna operates over the frequency range from 7.6 to 26.5 GHz with a maximum beam scanning of 60/spl deg/ from -34/spl deg/ to +26/spl deg/. Both PET phase shifters are controlled by a single bias voltage that varies from 0 to 40 V. The PET controlled phase shifter is optimized with a parametric analysis, which results in a smaller control voltage and a better linearity of phase shift as a function of frequency, compared to the previously reported results. The proposed beam steering method should reduce the size and cost of phased array antenna systems.

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