Abstracts

A phased-array antenna using a multi-line phase shifter controlled by a piezoelectric transducer

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A new phased-array antenna of wide bandwidth with beam scanning capability has been developed. The array uses a multi-line time-delay phase shifter controlled by a piezoelectric transducer (PET) and a Vivaldi antenna array. The multi-line phase shifter controlled by the PET has an increased insertion loss of less than 1 dB and phase shift of 0/spl deg/ to 360/spl deg/ up to 20 GHz. The proposed phased-array antenna demonstrated a beam scanning capability from -16/spl deg/ to +17/spl deg/ at 10 GHz. Similar results were obtained from 10 to 18 GHz. The use of PET controlled phase shifter has advantages of low cost and low loss over a wide bandwidth.

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