Abstracts

Planar implementation of the partially overlapped subarrays for millimeterwave beam steerable antenna applications

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Grouping the elements of a phased array into the partially overlapped subarrays with in-phase excited elements amid using a single phase shifter per subarray has been studied in the past as an approach for reducing the number of phase shifters. Overlapped subarrays require complicated: feeding scenarios, however, that cannot be easily implemented in planar technologies. This paper focuses on a planar implementation which is especially useful for compact millimeterwave arrays and facilitates integration of the antenna and electronics. This design uses a unique combination of series and parallel feeding schemes to form a standing wave array of. microstrip elements. The proposed feeding scheme is theoretically insensitive to the mutual coupling between the elements.

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