

A Ka-band perpendiculary-fed patch array for spatial power combining

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A Ka-band spatial power combining amplifier array employing a perpendicular feed structure is presented. The amplifier array utilizes perpendicularly-fed, aperture-coupled microstrip patch antennas with a unique feed structure for both the input and output antennas. This feed places the devices and antennas on separate planes, allowing for a smaller unit cell size, a simplified layout, and a minimum interaction between the devices and fields. A 7/spl times/7 passive and active amplifier array have been designed and fabricated at Ka-band. Experimental measurement results for both arrays are given.

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