

A novel wideband microstrip to additively fabricated waveguide transition

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A novel wideband microstrip to additively fabricated waveguide transition is presented. The proposed design takes advantage of the flexibility of 3-D printing to realize a highly integrated transition from the microstrip line on a printed circuit board (PCB) to an air-filled waveguide using an additively manufactured radiating probe. The idea is experimentally verified by the realization of an exemplary transition working within the X-band at $f_0 = 10.5$ GHz. The measured performance of the back-to-back transition proves its usefulness and possibility of utilization in highly integrated PCB-waveguide circuits.