Abstracts

A 10 GHz integrated class-E oscillating annular ring element for high-efficiency transmitting arrays

J.A. Hagerty and Z. Popovic. "A 10 GHz integrated class-E oscillating annular ring element for high-efficiency transmitting arrays." 2002 MTT-S International Microwave Symposium Digest 02.2 (2002 Vol. II [MWSYM]): 1317-1320 vol.2.

An X-band oscillating element can be achieved in compact form with class-E operation and high directivity. An annular ring is used both as the radiating element and microstrip feedback circuit for the class-E amplifier. A maximum conversion efficiency of the DC power consumption to radiated copolarized power is 55% at 10 GHz with maximum effective radiated power of 23.6 dBm and total radiated power of 15.5 dBm. This active antenna element is shown to be a good candidate for high aperture efficiency spatial power combining.

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