Abstracts

TM/sub 0n0/- and TM/sub m10/-Mode Oversized Cylindrical Cavity Power Combiners

S. Nogi and K. Fukui. "TM/sub 0n0/- and TM/sub m10/-Mode Oversized Cylindrical Cavity Power Combiners." 1987 Transactions on Microwave Theory and Techniques 35.9 (Sep. 1987 [T-MTT]): 835-842.

TM/sub m10/-mode power combining is treated in addition to conventional TM/sub 0n0/-mode combining in a multiple-device oversized cylindrical cavity having a window output structure. Mode analysis gives the condition for stable power-combining operation in the desired mode. By experiments both on TM/sub 0n0/ -mode combining (n = 2, 3, and 4) and on TM/sub m10/ -mode combining (m = 2 and 8), it is shown that almost perfect power combining in the TM/sub 210/ mode can be achieved as in the TM/sub 020/ mode and that the power combining efficiency decreases gradually with increasing n or m. A possible advantage of TM/sub m10/ -mode combining in an oversized cavity is suggested based on the experimental result that power combining in the TM/sub 810/ mode gives higher efficiency than in the TM/sub 040/ mode.

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