

# Abstracts

## A Compact, Wide-Tuning Range, Dual TE<sub>111</sub>/Mode Preselector

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*R.L. Fjerstad. "A Compact, Wide-Tuning Range, Dual TE<sub>111</sub>/Mode Preselector." 1966 Transactions on Microwave Theory and Techniques 14.9 (Sep. 1966 [T-MTT]): 424-427.*

This paper describes the development of a dual TE<sub>111</sub>/ mode cavity preselector that is centrally loaded with a large, nonferrous, metallic perturbation plug. The cavity tunes over the 6 to 8 GHz range. Dual mode operation reduces the size of the cavity to one-half the size of a conventional cavity. The perturbing plug increases the separation between the desired TE<sub>111</sub>/ mode and the undesired, next higher TM<sub>011</sub>/ mode from 15 Percent to 33 Percent. The result is a 29 percent tuning range that is free from unwanted modes. The preselector exhibits a 3 dB bandwidth of 60 MHz, a 40 dB bandwidth of about 400 MHz, and an insertion loss that is no more than 1 dB.

[Return to main document.](#)