Abstracts

A High-Power Waveguide Tuner (Correspondence)

C.E. Muehe, Jr.. "A High-Power Waveguide Tuner (Correspondence)." 1968 Transactions on Microwave Theory and Techniques 16.10 (Oct. 1968 [T-MTT]): 882-883.

A high-power waveguide tuner is often needed to remove small mismatches in microwave systems, or to produce a purposely mismatched load for testing purposes. For instance, a tuner is usually inserted in a traveling-wave resonator used for high-power testing to remove small mismatches caused by imperfections in the resonator or the microwave component being tested. Any reflected wave in the resonator is particularly troublesome because it is amplified by the same mechanism which produces ring gain, and also appears as a large mismatch at the input coupler. The highest-power tuners used previously consisted of hybrids, either short-slot or magic-Tee, with movable shorts in two of the arms. In a well-built traveling-wave resonator, the tuner is usually the first source of breakdown trouble as the power is raised. Breakdown occurs in the movable shorts or in the hybrid at about a quarter of the power the waveguide will theoretically handle. The tuner shown in Fig. 1 was designed to remove this limitation.

❑ Return to main document.