# Abstracts

## Some Magic Tees with 2 to 3 Octaves Bandwidth

*A.F. Podell. "Some Magic Tees with 2 to 3 Octaves Bandwidth." 1969 G-MTT International Microwave Symposium Digest of Technical Papers 69.1 (1969 [MWSYM]): 317-319.*

Techniques have been developed which extend the frequency range of ring magic tees to 7:1 or more. Experimental 250 to 1000 MHz ring magic tees have been built with 0.6 db insertion loss (above the 3 db power split), 0.2 db amplitude balance, 2° phase balance, and a 1.5:1 maximum VSWR over the 2-octave frequency range. An experimental 300 to 1800 MHz ring magic tee has been built with the performance shown in Figure 5. Figure 1 shows schematically the basic ring magic tee, and a typical curve of VSWR versus electrical length. The four transmission lines are nominally 70.7 ohms characteristic impedance for a maximally flat design. If the line impedances are made 65 ohms, then the basic design has an equal ripple 1.18:1 VSWR bandwidth of one octave.

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