Abstracts

Precision Insertion-Loss Calibrations at 90 GHz (Correspondence)

C.T. Stelzried and D.A. Oltmans. "Precision Insertion-Loss Calibrations at 90 GHz (Correspondence)." 1969 Transactions on Microwave Theory and Techniques 17.4 (Apr. 1969 [T-MTT]): 233-234.

A dual charnel insertion-loss test set with an accuracy of ahout 10/sub -4/ dB has been constructed for the critical calibrations required in many phases of radio astronomy and communications systems. The commercially available test sets use 40-GHz balanced detector mounts for the power meters whch did not give satisfactory performance at 90 GHz. Thermistor mounts for the test set constructed have been assembled from commercially available 90-GHz components (WR 12 wavegrride band). The necessary thermistor thermal balance for the mounts is achieved with a fine paint spray on the reference thermistor with no loss n sensitivity. The short term instability (15 minutes) of the power meter has been reduced from about 2.0 to 0.2 μW. This results in short stability for the insertion-loss test set of about 0.0004 dB at 90 GHz.

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