Abstracts

Dual-Tone Calibration of Six-Port Junction and its Application to the Six-Port Direct Digital Millimetric Receiver

J. Li, R.G. Bosisio and K. Wu. "Dual-Tone Calibration of Six-Port Junction and its Application to the Six-Port Direct Digital Millimetric Receiver." 1996 Transactions on Microwave Theory and Techniques 44.1 (Jan. 1996 [T-MTT]): 93-99.

This paper describes a novel dual-tone calibration technique of six-port using two carriers with closely spaced frequencies. The samples for the calibration are extracted from outputs of four power detectors using a self-adaptive algorithm. The calibration procedure is fully automatic and can be implemented in a system capable of capturing the output waveforms of a six-port. Although the proposed method is applicable to general six-port calibrations, it finds itself particularly suitable for the calibration of a new six-port direct digital mm-wave receiver. It is shown that such a calibration of the digital receiver can be fulfilled on site simply by receiving usual incoming signals. Dual-tone calibrations made at 26.5 GHz, 33 GHz, and 40 GHz demonstrate the same order of accuracy as the conventional six-port calibrations. However, the new technique is much simpler and faster as it requires less effort in its implementation.

❑ Return to main document.