Abstracts

Investigation of a Single-Sideband Mixer Anomaly (Dec. 1983 [T-MTT])

B.R. Hallford. "Investigation of a Single-Sideband Mixer Anomaly (Dec. 1983 [T-MTT])." 1983 Transactions on Microwave Theory and Techniques 31.12 (Dec. 1983 [T-MTT] (1983 Symposium Issue)): 1030-1038.

Measurements on a 6-GHz single-sideband (SSB) balun-coupled mixer revealed a feedthrough of RF signals between the two mixer sections that caused the IF outputs to be unbalanced at the ±90° local oscillator (LO) phase differences when using a ring diode quad. Using a bridge diode quart in this same mixer eliminated this IF output unbalance. These measurements also give conclusive evidence that the balun-coupled mixer has a short-circuited image frequency voltage with the ring diode quad and an open-circuited image frequency voltage with the bridge diode quad. These two image frequency impedance conditions are independent of circuit terminating impedances and solely depend on the image frequency current path being completed or interrupted by the ring or bridge diode quads, respectively.

❑ Return to main document.