

An Investigation into the Isolation and Bandwidth Characteristics of X-Band Chireix Power Amplifier Combiners

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Abstract : This paper describes an investigation into the isolation characteristics and bandwidth performance of RF combiners that are used as part of Chireix PA architectures, designed for use in the X-Band range of frequencies. Combiner designs investigated are the typical Chireix and Wilkinson configurations which also include simulation of the Wilkinson using manufacturer's data for the isolation resistor. Another simulation was the less common approach of using a Branchline coupler to form the combiner, as well as simulation results from adding an additional stage. This paper presents the findings of this investigation and compares the bandwidth performance and isolation characteristics to determine suitability.

Keywords : bandwidth, Chireix, couplers, outphasing, power amplifiers, Wilkinson, X-Band

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