BROAD-BAND REACTIVELY LOADED DIPOLE ANTENNA

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KEY TERMS

Dipole antenna, moment method, broadband techniques

ABSTRACT

A dipole antenna is an inherently frequency-sensitive device. The frequency characteristics of the dipole are governed by the current that is induced along the radiating element. Herein, we suggest a design technique of reactive loading, aiming to maintain the current distribution, and consequently the input impedance and the radiation pattern, nearly constant over a wide band of frequencies. The promising potential of the loading scheme is demonstrated via a moment-method numerical simulation that shows that even with a single optimal lumped reactive load a notable 5 : 1 bandwidth with VSWR < 3 is attainable.