

Compact Variations of the J-Pole and Quarter-Wave Patch Antennas

MSEE Scholarly paper by Luis Baldeon

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Abstract

This paper focuses on the UHF characteristics of variations of the J-pole antenna in an effort to identify design techniques that can be used to reduce their physical size. The antenna variations discussed are folded J-pole and quarter wave patch. Several modifications to the quarter wave patch are also discussed. We will be looking to minimize the space needed for the antenna while maintaining the gain and bandwidth.

Antenna variations were first characterized using EZNEC+ antenna simulation software. Once a viable design was found, the antennas were fabricated. VSWR was measured using a network analyzer and gain was measured in an anechoic far-field chamber.