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A Dual-Polarized Wideband Probe for Near-Field Antenna Measurement

Authors : K. S. Sruthi

Abstract : Antennas are one of the most important parts of a communication chain. They are used for both communication and calibration purposes. New developments in probe technologies have enabled near-field probes with much larger bandwidth. The objective of this paper is to design, simulate and fabricate a dual polarized wide band inverted quad ridged shape horn antenna which can be used as measurement probe for near field measurements. The inverted quad-ridged horn antenna probe not only provides measurement in the much wider range but also provides dual-polarization measurement thus enabling antenna developers to measure UWB, UHF, VHF antennas more precisely and at lower cost. The antenna is designed to meet the characteristics such as high gain, light weight, linearly polarized with suppressed side lobes for near-field measurement applications. The proposed antenna is simulated with commercially available packages such as Ansoft HFSS. The antenna gives a moderate gain over operating range while delivering a wide bandwidth.

Keywords : near-field antenna measurement, inverted quad-ridge horn antenna, wideband Antennas, dual polarized antennas, ansoft HFSS
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