

RF Fields Group - Antenna Metrology

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The antenna metrology laboratory provides antenna measurement and calibration services to industry and other government agencies. The planar near-field technique developed in the early 70's at NIST was a departure from previous methods where the far-field parameters of the antenna under test (AUT) were measured directly. It provides an alternative technique useful in the measurement of antennas such as phased arrays and shaped beam communication antennas. These antennas have presented measurement problems which were impractical or impossible to meet with far-field ranges or anechoic chambers. An overview of planar near-field theory will be given, as well as examples of the usefulness of this measurement technique. In addition, we will present several areas of active research currently being pursued at NIST. These topics include antenna diagnostics, low sidelobe antennas, thermal imaging and quiet zone evaluation.