Microstrip Antenna Arrays with Parasitic Elements
(Cooperative Agreement NCC 3-126)

Final Report

Submitted to
NASA Lewis Research Center

By

Kai-Fong Lee
Department of Electrical Engineering and Computer Science
The University of Toledo

July 1996
I. DURATION OF GRANT

The grant started in February 1989 and ended in April 14, 1996. It consisted of the original one-year grant and seven supplements.

II. PERSONNEL INVOLVED IN THE RESEARCH

The grant was in the form of a Co-operative Agreement. The personnel involved included Dr. R. Q. Lee of NASA Lewis Research Center, Dr. K. F. Lee, Mr. Timothy Talty and Mr. Douglas Walcher of the University of Toledo. Mr. Talty and Mr. Walcher were students supported by the grant. Mr. Talty obtained his M.S.E.E. degree in August 1990 and will receive his Ph.D. degree in August 1996. Mr. Walcher received his M.S.E.E. degree in June 1996.

III. RESULTS OBTAINED

The research was concerned with using parasitic elements to improve the bandwidth, gain and axial ratio characteristics of microstrip antennas and arrays. Significant improvements in these characteristics were obtained using stacked and coplanar parasitic elements. Our research in this area is widely recognized in the microstrip antenna community. Details of our results are described in the Journal articles listed in Section IV.

IV. PUBLICATIONS

A total of 16 Journal papers and 17 Conference papers were published on research supported by the grant over the years. These are listed on the next 4 pages. Since copies of these publications were submitted with previous performance reports, they are not enclosed with this report.


CONFERENCES


After the last performance report submitted in December 1995, Mr. Douglas Walcher completed his thesis and was awarded the M.S.E.E. degree in June 1996. A copy of his thesis is attached to this report.