

**STUDY OF THE MICROSTRIP RECTANGULAR
LINEAR ARRAYS ANTENNAS**

A Thesis

Submitted to the College of Education

University of Basrah

**In Partial Fulfillment of the Requirements
for the Degree of Master of Science in Physics**

By

MOHAMMAD KAZUM HAMED

B. Sc Baghdad University (2002)

Supervised by

Prof. Dr. Ali A.S. Obaid

Assist. Prof. Dr. Ahmed H. Abood

2010 March

دراسة مصفوفات الهوائيات الشريطية المستطيلة الخطية

مرسالة مقدمة إلى

كلية التربية - جامعة البصرة

وهي جزء من متطلبات نيل درجة

ماجستير علوم في الفيزياء

من قبل

محمد كاظم حمد

بكالوريوس علوم فيزياء

جامعة بغداد 2002

إشراف

أ.م.د. أحمد هاشم عبود

أ.د. علي عبد الصمد عيد

2010 م

1431 هـ

ABSTRACT

Our present theoretical study deals the radiation pattern and radiation fields and its parameters that were produced by the resonant rectangular microstrip antenna according to cavity model, the design frequency is 1.28 GHz and dielectric constant $\epsilon_r=2.32$. The width of antenna is considered to be small enough to neglect the variation of the current in that direction. The radiation pattern and its parameters were calculated and have a good agreement compared with the recent result using different analysis methods .

The effect of antenna length on the radiation pattern parameters is studied, the computed results show a little enhancement in the radiation parameters, so, we built a linear array of these antenna to improve the radiation parameters.

The effect of number of element, spacing elements, and phased array are studied. finally the relationship between the directivity and the steering angle of phased array were also studied it has been found that there is a relationship between the different distances in relation to the elements and the surveying angle .

**STUDY OF THE MICROSTRIP RECTANGULAR
LINEAR ARRAYS ANTENNAS**

A Thesis

Submitted to the College of Education

University of Basrah

**In Partial Fulfillment of the Requirements
for the Degree of Master of Science in Physics**

By

MOHAMMAD KAZUM HAMED

B. Sc Baghdad University (2002)

Supervised by

Prof. Dr. Ali A.S. Obaid

Assist. Prof. Dr. Ahmed H. Abood

2010 March

دراسة مصفوفات الهوائيات الشريطية المستطيلة الخطية

مرسالة مقدمة إلى

كلية التربية - جامعة البصرة

وهي جزء من متطلبات نيل درجة

ماجستير علوم في الفيزياء

من قبل

محمد كاظم حمد

بكالوريوس علوم فيزياء

جامعة بغداد 2002

إشراف

أ.م.د. أحمد هاشم عبود

أ.د. علي عبد الصمد عيد

2010 م

1431 هـ