

Dedication

To my beloved mother, and to the memory of my dear beloved father, I thank God that without whom I would have been nothing and of no value.

Nobody has been more important to me in the pursuit of this project than the members of my family. I would like to thank my mother whose love and guidance are with me in whatever I pursue. Most importantly, I wish to thank my loving and supportive wife and my wonderful sons and daughters who provide unending inspiration”

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ABSTRACT

Antennas have been the most neglected of all the components in personal communications systems. Yet, the manner in which energy is distributed into and collected from surrounding space has a profound influence on the efficient use of spectrum, the cost of establishing new networks, and the service quality provided by those networks.

There are two fundamental types of antennas, Omni-directional (radiates equally in all directions), and directional (radiates more in one direction than the other)

The objective of this thesis is to study the creation of radiations, some of the features and parameters of antennas, and to maintain an optimization of radiation pattern by utilizing a nonuniform antenna array of Dolph-Tschebyscheff, which is a trade-off between the beamwidth and side lobe levels.

المستخلص

يبدو لدى البعض أن الهوائيات ليست ذات أهمية في مجال الاتصالات بالرغم من انتشارها. إن كيفية بث الطاقة الكهرومائية أو استقبالها من الفضاء لها دور وتأثير كبير في استخدام الطيف الكهرومغناطيسي وفي استخدام دوائر الاتصالات وفي نوعية وجودة الاتصالات وتكلفتها.

هناك نوعان أساسيان من الهوائيات من حيث الإشعاع :-1-هوائيات ذات شعاع في كل الإتجاهات .2-وهوائيات ذات اشعاع في اتجاه محدد

يتطرق هذا البحث لدراسة إنتاج الإشعاع بجانب التعرض لبعض خواص الهوائيات

غاية هذا البحث هو محاولة إيجاد إشعاع متركز في إتجاه معين مع محاولة تقليل الإشعاع في الإتجاهات الأخرى .