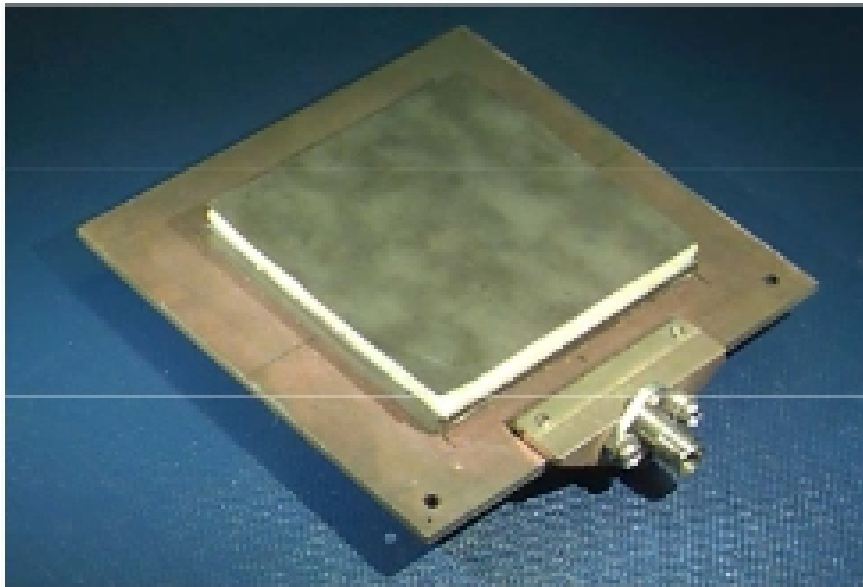


ECE 6345

Spring 2011

Prof. David R. Jackson
ECE Dept.



Notes 15

Overview

In this set of notes we calculate a CAD formula for the **directivity** and **gain** of the rectangular patch antenna.

Directivity

Definition of directivity:

$$D(\theta, \phi) = \frac{S_r(r, \theta, \phi)}{\left(\frac{P_{sp}}{4\pi r^2} \right)} = \frac{4\pi r^2 S_r(r, \theta, \phi)}{P_{sp}}$$

For typical substrate thicknesses, we usually have

$$D_{\max} = D(0,0)$$

where

$$D(0,0) = \frac{4\pi r^2 S_r(r, 0, 0)}{P_{sp}}$$