

Open Seminar Series

Geoscience & Remote Sensing

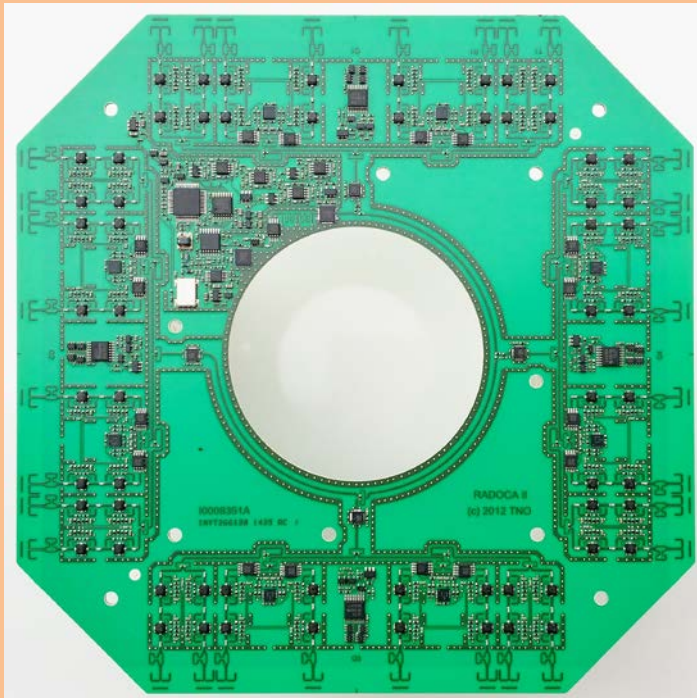
Three applications of microwaves

Jos Groot – IP2 solutions

December 17, 2015

12:40-13:30

CiTG room F



Radar board of the surveillance radar. Each of the four sides carries 8 antennae.

Many people know microwaves foremost from their microwave oven ("magnetron") or from speed controls with radar. Microwaves are just like light electromagnetic waves, only having longer wavelengths, say between 1 millimeter and 1 meters. Our everyday world has the same scale and therefore microwaves allow for determining measuring positions and speeds at the same scale, which is quite useful. In this talk I will present three applications of microwaves along with the necessary background theory:

1. *Surveillance.* This is done with a solid state radar without moving parts with 360 degree horizontal coverage. It is capable of detecting objects and their movement within a radius of 100-200 m.
2. *Asparagus detection.* Nowadays asparagus are harvested by hand. We investigate a method to detect them automatically while still being covered by soil.
3. *Golf ball distance measurement.* Golf players are interested in the distance of their shot. A golf ball with a transmitter inside was developed. The received signal can be used to estimate the distance the ball traveled.