

## Abstract

### ***“On the Design, Characterization and Optimization of RFID Tag Antennas”***

Remotely read electronic identification tags are establishing as the standard method of identifying objects in transport logistics. They are referred to as RFID tags and with successful research and development they are likely to one day replace all of today's barcodes, found on a wide variety of items and objects. As RFID systems consist of many different parts spanning over just as many academic subjects, this thesis investigates some of the main issues regarding RFID tag antennas. Large focus is put on performance and cost optimization of relatively simple one-layer antennas, suitable for mass production in commercial printing presses using electrically conductive ink. Examples of specially designed antennas include ones that can operate upon metallic objects and antennas that can be physically bent. It is also shown how RFID tag antennas that will be widely exposed to the human eye can include a commercial value by letting their geometric design originate from group insignias and company logos. The thesis also presents a solution of how pairs of ordinary low cost RFID tags can be used as remotely read moisture sensors.

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