

Dielectric Resonator Antenna Array for Device-to-Device Communication in 6G mobile networks

To meet the requirements of emerging applications, it is foreseen that the future 6G mobile network will be an ultra-dense, heterogenous network connecting all things with high speed data transmission. Exciting solutions for device-to-device communication are in high demand.

Dielectric resonator antennas are well known in the literature for their high efficiency. However, they typically achieve medium gain. At 140 GHz, the free space path loss is significant and antennas with high gain will be required. In order to produce an antenna with both high gain and high efficiency, a dielectric resonator antenna array should be investigated in this work. The aim of the dielectric resonator array in question is to embed it in a device, i.e. a mobile phone, for device-to-device communication. Therefore, an important part of the work will also be to investigate the influence of the packaging and surrounding electronics on the antenna's performance.

Prerequisites

Knowledge of antenna and antenna arrays, and experience with CST Microwave Studio required

The thesis can be written in English or German.

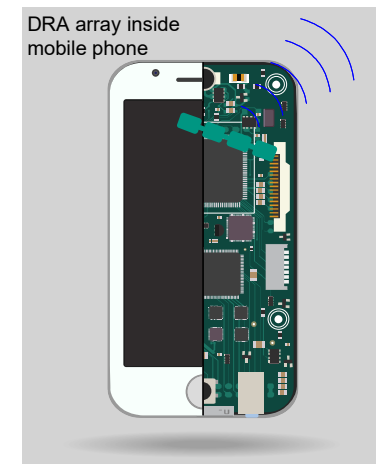


Image: shutterstock

Ansprechpartner

Elizabeth Bekker

Building 30.10, Room 1.29

E-Mail: elizabeth.bekker@kit.edu

Telefon: 0721-608 46253

Dr.-Ing. Akanksha Bhutani

Building 30.10 , Room 1.28

E-Mail: akanksha.bhutani@kit.edu

Telefon: 0721-608 43304