

Dissertation press release

14.09.2020

5G antennas for mobile phones and base stations

Title of the dissertation	Millimeter-wave antennas for 5G handsets and base stations
Contents of the dissertation	<p>Mobile communication networks have been a major force shaping the world we live in for the last couple of decades. Mobile communications are expected to enable new paradigms such as the Internet-of-Things (IoT), machine to machine (M2M) communications, self-driving cars, and virtual and augmented reality. This will translate into an exponential increase in the number of connected devices, and thus, in the amount of data being transmitted in the upcoming years.</p> <p>Mobile phones and base stations will start incorporating new 5G mm-wave antennas in order to fulfill the needs of the new communication networks. The new mm-wave antennas will operate at higher frequency bands, and thus, provide higher capacity and faster transmission speeds to the end users.</p> <p>In this work, both handset and base-station antennas are developed for 5G and subsequent networks operating at millimeter-wave frequencies. The designed handset antennas are compatible with current state of the art mobile phone chassis which generally include a metallic frame for aesthetical reasons. The developed base station antennas are compact, inexpensive and scalable in size, making them mass producible.</p>
Field of the dissertation	Radio technology, Antennas.
Doctoral candidate	Resti Montoya Moreno, M.Sc. Born in Albacete, Spain, in 1992
Time of the defence	09.10.2020 at 9.00 am
Place of the defence	On-line in Zoom (meeting ID 663 7158 6377)
Opponent	Associate Professor Wonbin Hong., Pohang University of Science and Technology, Republic of Korea
Custos	Associate Professor Ville Viikari., Aalto University School of Electrical Engineering, Department of Electronics and Nanoengineering
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