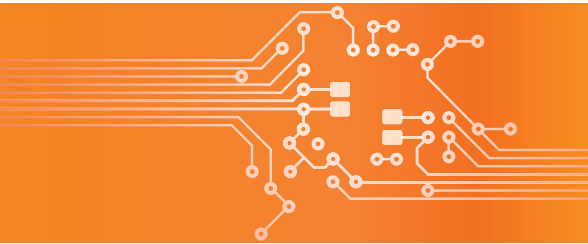


Success Story

www.optenni.com



Company Name

Convergentia

Contact

Dr. Sami Hienonen, Technology Manager

Application

Antenna Solutions

Company Profile

Convergentia is a virtual prototyping company that was founded by a team of simulation specialists from design and manufacturing backgrounds, with idea to assist companies speed up their device creation process and to enable high quality first build prototypes.

More Info

www.convergentia.com

Optenni Lab Enables Faster Tablet and Smartphone Antenna Design

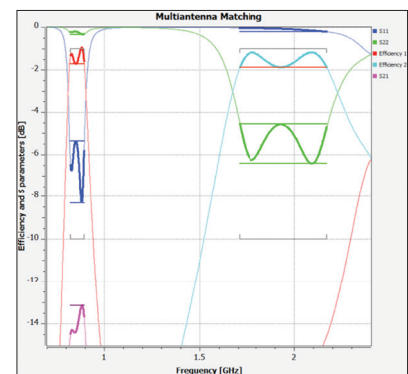
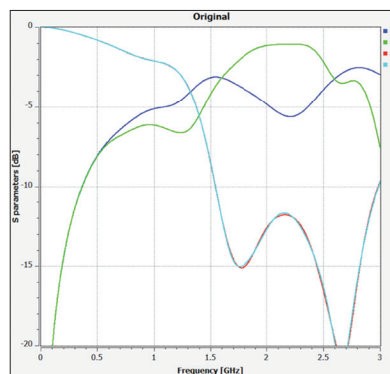
The Design Task

Convergentia team develops antenna solutions to a wide scale of devices, from tiny bluetooth headsets to complex LTE antenna systems used in smartphones and tablets. One of the trickiest design tasks is to integrate multiple antennas with inherently low isolation into a tablet or a smartphone. In the traditional design flow the simultaneous matching of all antennas requires many design iterations. The matching circuits must not only provide low insertion loss for each antenna, but also to enhance the antenna-to-antenna isolation.

The Optenni Solution

The multiport matching capability of Optenni Lab™ gives optimized solution for the multiple matching networks in one shot, and its automatic creation of multiple topologies is very helpful in choosing the most promising matching circuit candidates. Optenni Lab's matching circuit synthesis is very efficient, using multiple cores of the PC for parallel processing of topologies. The tool is also easy to use: there is no need for deep circuit simulation knowledge, and the synthesis uses real vendor component libraries, which is a big plus.

Moreover, links to CST Studio Suite and NI AWR Microwave Office simplify the overall design flow. Optenni's support and technical documentation are very valuable additional resources.



Left image shows S-parameters of two unmatched antennas. Impedance matching of the antennas is poor, and isolation is only 1-2dB at 800-900MHz. Right image shows S-parameters after multiport matching, resulting in efficiencies above -2dB and isolation better than 13dB over the target frequency bands 800-900MHz and 1710-2170MHz.

“ Matching network design for antennas is a slow and iterative process. Optenni Lab creates automatically several topologies and speeds up the design process considerably. The tool is also very easy to use and does not require special RF knowledge. ”

Dr. Sami Hienonen, Technology Manager, Convergentia,