SAAB

Certificate – Thesis work

Name Erik Sanford	**Swedisch Nat.** **Ident. No** 890913- ▮

Department
Antenna & Transmitter Design

Period of employment
2013-01-21 – 2013-06-30

Assignment

Erik has together with Victor Hallman performed a master thesis project, Co-Design and Integration of Wideband Push-Pull Power Amplifier and Omnidirectional Antenna, at the Microwave, Antenna and Laser Department at Saab.

The purpose of the project was to examine how and if it is possible to integrate a wideband power amplifier with an antenna over a balanced interface. Abandoning the standard 50 Ohm unbalanced interface has the benefit of removing the need of a balun, at the same time as it enables the power amplifier and antenna to be co-designed to any preferred impedance. In the project, Erik and Viktor made use of these benefits to design a wideband, compact, and robust amplifier-antenna system.

Erik and Victor initially performed a literature review and theoretical studies. This was followed by simulations, optimisation, and manufacturing of prototypes. The final design was manufactured and measured. They worked together but were individually responsible for different parts of the design, where Erik was responsible for the antenna part. He has studied and evaluated different solutions and then integrated the chosen design. Erik and Viktor achieved, and surpassed, the goals set up at the start of the project. They persevered and found solutions to several unforeseen problems that arose because the standard design procedure with a 50 Ohm interface was abandoned.

Erik has worked independently and very well with excellent timing. He has cooperated perfectly with his thesis partner, his supervisors and collegues. Diffuculties during the project has been handled well and in a good spirit. The project was profesionally managed and the report and presentation are very good. We wish him all the best in the future.

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Saab AB (publ)
Electronic Defence Systems

Lovisa Björklund
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