

Acknowledgements

I would like to thank Dr. Anbo Wang, my advisor, for giving me the opportunity to work at FEORC. Without his brilliant guidance, this dissertation could not be done. I would like to thank Dr. Richard O. Claus for thoughtful discussions and supports. I would also like to thank Dr. Ioannis M. Besieris, Dr. Kent A. Murphy and Dr. Tao Lin for useful discussions and for serving on my committee.

I wish to thank Jaydeep Ranade for his hard work on the research we have done together. I also wish to thank Dr. Vivek Arya for valuable assistance. I am also grateful to Hai Xiao, Jun Wang, Wei Zhao and Dr. Xiaojun Fang for their suggestions and assistance during the experiments. A special thanks to Linda Jones, Robert Lockhart and the other members of FEORC for making it pleasure.

I am deeply grateful for love and support by my parents, Do Chang and Jung Sook Oh. I wish to thank my wife, Sun Hi, my daughter In Hae, and my son, Hun for their love and patient and for giving me the courage to make it.

This research was supported financially by the Phillips Laboratory of the U.S. Air Force.