

For the first six weeks, pre-work, I have been researching the concepts on antennas and UWB. I have had no prior experience with working on antennas, so watching class lecture tapes, reading text books, and researching other people's, student's projects on UWB antennas has been done. The EE550, Electromagnetic Theory, textbook (Fundamentals of Applied Electromagnetics, Fifth Edition, Fawwaz T. Ulaby) has been used as part of the research. The EE550 lecture tapes have been watched to help with the reading of the textbook. The lecture tapes on Chapter 9, Radiation and Antennas, were the tapes watched during this six-week process. During this time, I have learned that antennas can transmit signals, receive signals, or do both. An Omni directional antenna radiates power in a uniform pattern in one plane. The far-field approximation is that a spherical wave transmitted from an antenna looks planar in the far-field, region. The beamwidth of an antenna is defined as characterizing the width of the main lobe in a given plane. Directivity is the ratio of the maximum normalized radiation intensity over the average normalized radiation intensity. This briefly gives an example of what I have learned about antennas. Many another references have consulted, and some are listed below. The first one listed is a shortened version of a paper. I have received help on how to obtain the whole document, but complications have occurred and the whole document has not been obtained yet. This antenna is very similar in design to what my project is planned to be. When I get the paper, it will be used often to help design the UWB antenna. After winter break, I will start designing the antenna in Sonnet, a computer program. Also below are two attachments from Omron. Omron was selling a UWB antenna. Dr. Shastry and I tried to order the antenna, but Omron did not sell us one. Our email to Omron is below with the email sent back from Omron stating why they did not sell us an antenna. In the email from Omron, they gave a web site about the specifications on the UWB antenna.