**Miniaturized and Low-Profile Antennas for Mobile and Robotic Platforms**

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In recent years we have witnessed wireless revolution which has been fueled with never quenching desire for anywhere anytime communication and access to data. Miniaturized low-power electronics and wireless devices are the key enabling components of the wireless revolution. As we go forward there is still significant desire to further reduce the size, lower the power, and improve the data rate provided by such systems. In addition to the conventional wireless applications, the emergence of robotics and the need for networking robots together and their surrounding infrastructures as well as interfacing them with human will require further innovation and improvement of wireless systems. For such application, antennas still constitute a major bottleneck in terms of size, bandwidth, efficiency, as well as frequency, polarization and radiation pattern agility and diversity. For many terrestrial communication and for other near earth wave propagation applications, vertical polarization is preferred as the propagation path loss is far lower than any other polarization configurations. Traditional dipole and monopole antennas are large and are non-conformal to mobile and small wireless devices and therefore, low profile small antennas with vertical polarization are needed to achieve much lower propagation path loss. Conventional approaches to reduce the height of monopole antennas cause significant drop in efficiency and polarization purity. Different miniaturization techniques are presented to achieve miniaturized vertically polarized antennas with height as low as λ/300. Different applications requiring such low profile antennas will also be discussed. For radiation diversity, the design and performance of miniaturized omnidirectional horizontally polarized and circularly polarized antennas are presented as well. Finally for small receiving antennas we consider a concept of wideband operation by connecting the antenna to a high impedance receiver and show that such receivers can outperform (in terms of output S/N) the same antenna had it been impedance matched.