

Reconfigurable, Circularly Polarized and Scanning Antennas for Wireless Networks

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Abstract—This paper presents some innovative antenna designs with enhanced performances for the next generation of wireless networks. High-gain printed microwave and millimeterwave antennas, both linearly and circularly polarized are discussed as well as reconfigurable circularly polarized antenna with switchable sense of polarization. Special attention has been devoted to the design of frequency scanning antennas based on metamaterial-inspired phase shifters. All presented antennas demonstrate considerable improvement of the efficiency, bandwidth of operation, axial ratio and frequency sensitivity. Also, they are very simple for manufacturing even at millimeterwave frequencies.