

Millimeter-Wave Fresnel Zone Planar Lens and Antenna (1995 Vol. II [MWSYM])

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A new variety of millimeter-wave Fresnel zone planar lens with enhanced focusing quality is described. Each full-wave zone is divided into four quarter-wave subzones covered by equal in thickness dielectric rings having different permittivities. More precise expression for the lens thickness is deduced. On the base of this planar lens configuration a Fresnel-zone lens antenna with about 52% aperture efficiency for a frequency of 62.1GHz is developed and examined theoretically.

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