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CYLINDRICAL FRESNEL ZONE ANTENNA WITH REFLECTIVE GROUND PLATE

ABSTRACT OF THE DISCLOSURE

An antenna employs cylindrical Fresnel zone plate (CFZP) construction in combination with a reflective ground plate and a sectorial reflector to enhance antenna gain, while lowering assembly cost and improving antenna placement flexibility. By forming a surface of symmetry for the antenna, the ground plate allows the antenna to mimic the operation of a symmetrical CFZP antenna using only half the nominal number of Fresnel elements. Further, the sectorial reflector restricts radiated emissions over a desired sector angle, minimizing radiation in undesirable directions, such as toward mounting walls or other nearby surfaces that would cause unwanted signal reflections, such as might aggravate multipath signal phenomenon.

Figure 4