Abstracts

Design of a nonradiative dielectric Rotman lens in the millimeter wave frequency

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In this paper, a Rotman lens for a multi-beam feed that can be applied to a car collision avoidance radar in the millimeter wave frequency range was designed using nonradiative dielectric (NRD) guide. NRD guide at the output ports was designed to obtain low loss, small coupling between the output ports, and dominant mode operation. The Rotman lens is optimized so as to minimize the sidelobe of the array factor. To prevent the beam pattern from being distorted, multiple-reflection from the sidewall has been eliminated by employing a corrugated sidewall.

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