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Integrated Si lens antenna with planar log spiral feed for THz band

(Conference Paper)

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Abstract

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A hybrid antenna is used to design a mixer in the heterodyne receiver for THz range application to increase the system efficiency. Design of a high precision THz range antenna for a constant far-field beam pattern is always a challenging task to the design engineers. A design procedure of THz band antenna by using CST Microwave Studio has been presented. The antenna has been designed and optimized to achieve constant far field beam as well as fixed polarization. Beam patterns, maximum directivity, on band directivity flatness, polarization, $\Phi = 0^\circ$ and $\Phi = 90^\circ$ beam symmetries have been studied for 5mm hemispherical lenses over WR-1.5 band (500GHz to 750GHz). Experimental results show a better matching accuracy within the design considerations. © 2014 IEEE.

Author keywords

CST MWS extended hemispherical lens log-spiral antenna terahertz band

Indexed keywords

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CST microwave studio

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