Abstracts

A 60GHz Imaging Array Using CPW-Fed Twin-Slots on Multilayered Substrates

Y. Qian and E. Yamashita. "A 60GHz Imaging Array Using CPW-Fed Twin-Slots on Multilayered Substrates." 1996 MTT-S International Microwave Symposium Digest 96.2 (1996 Vol. II [MWSYM]): 1007-1010.

We report optimal design and experiments of a novel 60GHz imaging array using CPW-fed twin-slots on multi-layered dielectric substrates. This is an all-planar structure without having to use accompanying superhemispherical substrate lenses. It has nearly symmetric radiation patterns, low surface wave losses, as well as controllable beamwidths to match the f-number of the quasi-optic system. Optimal design of the antenna/detector circuitry has been realized using FDTD analysis results of the CPW-fed slot. A 6-element array has been fabricated and tested, with results revealing excellent capabilities of this newly proposed imaging array structure.

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