Abstracts

Large Scale W-Band Focal Plane Array for Passive Radiometric Imaging

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This paper discusses the development of a large scale W-band focal plane array (FPA) for passive radiometric imaging application. The goal is to develop a 40x26 (1040-pixels) FPA to cover 15°x 10° instantaneous field-of- view. Each receiver consists of a single direct detection MMIC which is a W-band high gain, wide bandwidth switched LNA with integrated Schottky barrier diode detector. A 1x4 FPA module, employing linearly tapered slot antenna, is used as the basic building block for the FPA. Typical receiver temperature sensitivity is 0.4K with 10 ms integration time. For the first time, an automated assembly process is used to produce W-band MMIC modules in large volume.

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