Abstracts

Ka-band coupled-cavity TWT amplifiers for military radar and commercial satellite communication

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Ka-band coupled-cavity traveling wave tube amplifiers have been developed for military radar applications requiring high power, moderate bandwidth and light weight. The design features and measured performance characteristics of these devices are presented. The technology advancements achieved in the radar programs are being leveraged to design Ka-band satellite communication amplifiers that surpass power limitations of existing solid state or helix TWT systems. The design features and expected performance of the communication amplifiers are presented. Recent development of a 3-D nonlinear time-domain simulation code, GATOR, is aiding the communication device design effort. The application of the codes to high efficiency amplifier design are illustrated.

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