

Coherent Transmitter Considerations Utilizing Injection Locked Magnetrons

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The Radio Frequency (RF) power generation capability of various Ka-band transmitter alternatives are discussed. The coherent magnetron can be a low cost method of producing Ka-band RF power efficiently. Additive FM noise characteristics of commercially available X-band magnetrons were measured and their power combining capability studied. Finally, noise theory for coherent magnetrons is reviewed and an equation to predict FM noise performance is derived.

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