Abstracts

Status of the Microwave Power Transmission Components for the Solar Power Satellite (Dec. 1981 [T-MTT])

W.C. Brown. "Status of the Microwave Power Transmission Components for the Solar Power Satellite (Dec. 1981 [T-MTT])." 1981 Transactions on Microwave Theory and Techniques 29.12 (Dec. 1981 [T-MTT] (1981 Symposium Issue)): 1319-1327.

During the 1970-1980 time period a substantial advance has heen made in developing all portions of a microwave power transmission system for the solar power satellite (SPS). The most recent advances pertain to the transmitting portion of the system in the satellite and are based upon experimental observations of the use of the magnetron combined with a passive directional device to convert it into a highly efficient directional amplifier with excellent low-noise properties and potentially very long life. The ability of its microwave output to track a phase reference makes it possible to combine it with many other radiating units to provide a highfy coherent microwave beam. The ability of its output to track an amplitude reference while operating from a dc power source with varying voltage makes it possible to eliminate most of the power conditioning equipment that would otherwise be necessary.

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