

A compact dual-polarized 8.51-GHz rectenna for high-voltage (50 V) actuator applications

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This paper describes a dual-polarized rectenna capable of producing a 50-V output voltage that can be used for driving mechanical actuators. This study demonstrates a circuit topology that allows the output of multiple rectenna elements to be combined in order to step up the output voltage. In this paper, an independent rectifying circuit is used for each of two orthogonal polarizations. By proper combination, the output voltage is doubled over that of the single polarization case. Such panels are being explored for use on the next-generation space telescope to eliminate wiring between actuators and provide for true mechanical isolation.

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