

## **Compact Schottky barrier diode receiver for E-Band (60–90 GHz) wireless communications**

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### **Abstract**

A compact E-Band receiver based on a zero bias Schottky barrier diode, folded dipole antenna and hyperhemispherical silicon lens for wireless communications is presented. Zero bias Schottky diodes were designed and manufactured, and all their parameters were extracted. The folded dipole antenna is designed in such a way that maximum power is transferred from it to the Schottky diode, so the responsivity of the overall receiver will be improved. In addition, a study on the optimal hyperhemispherical silicon lens for this antenna has been undertaken.