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(57) Abstract :
The present invention relates to a system for ultra-high frequency communication in smart cities, comprising a UHF Antenna Array (101), Adaptive Modulation Unit (102), Spectrum Allocation Controller (103), AI-based Routing Engine (104), Edge Computing Nodes (105), IoT Device Interfaces (106), and Secure Data Management Module (107). The system ensures reliable, low-latency, and secure communication for IoT devices, autonomous vehicles, and critical infrastructures. It integrates beamforming, spectrum reallocation, and AI-driven routing, thereby providing a scalable, energy-efficient, and sustainable solution for modern urban communication needs.

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