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(57) Abstract :

The present invention relates to a system for intelligent frequency sensing in IoT communication comprising a frequency sensing module (101), a spectrum analysis unit (102), an intelligent decision engine (103), an adaptive transceiver unit (104), an energy management controller (105), and optionally an edge gateway (106). The system intelligently senses and analyzes spectrum conditions, predicts interference patterns, and dynamically selects optimal channels. It ensures energy efficiency, reliability, and scalability in dense IoT environments, thereby enabling robust, interference-resilient, and adaptive communication among interconnected IoT devices.

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