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(37) Abstract:
The present disclosure introduces a wireless power transmission and device charging system using resonant inductive coupling 100 designed for efficient mid-range, wireless charging without cables. The system incorporates an input ac power source 102 to initiate the charging process and an inverter 104 to convert AC power into a high-frequency AC signal, enhancing transmission. A transmitter resonant coil 106 generates a magnetic field at a tuned frequency, which is captured by the receiver resonant coil 108. The resonant inductive coupling mechanism 110 ensures effective energy transfer by synchronizing resonance between the transmitter and receiver coils. A rectifier circuit 112 converts the induced AC voltage into direct current, while the voltage regulator 114 stabilizes the DC output to ensure safe device charging. The system is completed with a wireless charging pad 116 and a device integration module 118 for compatibility, enabling convenient charging for electronic devices. Reference fig 1

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