

Powering the Ultra-Low-Power Wireless system/IoT Node by Scavenging Multi-Band Radio Frequency (RF) Energy– SERB



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Theme

Powering up Cyber Physical Systems and IOT using Energy Scavenging

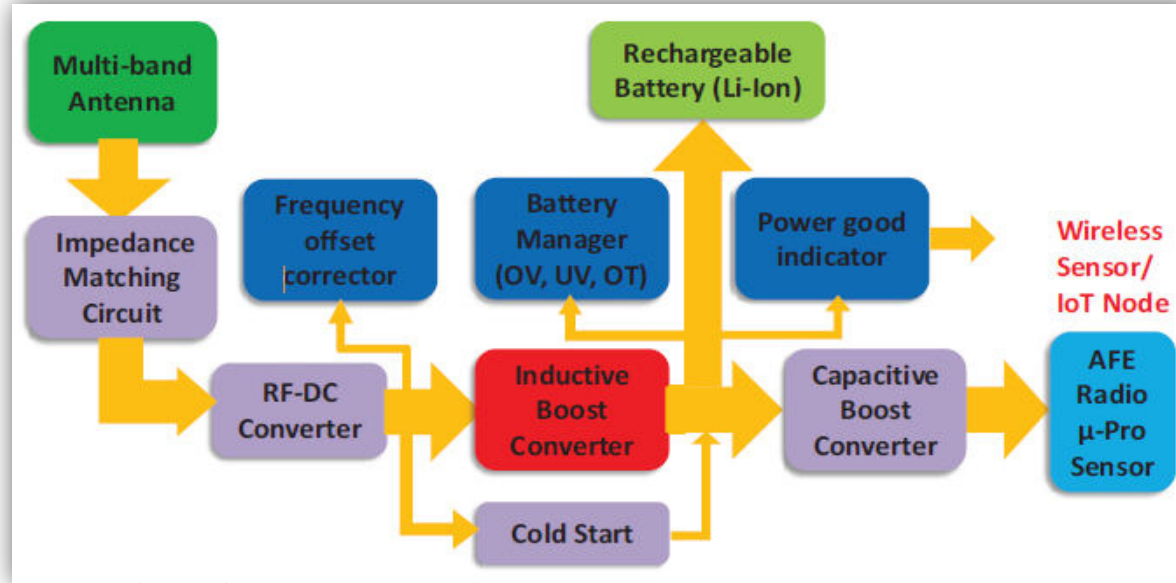
Status

Completed

- ❖ Single impedance matching network
- ❖ Single stage RF-DC converter

Ongoing

- ❖ DC-DC converter (BITS)
- ❖ Battery management (IITG)



Phase 1

- Literature Survey

Phase 2

- RF to DC converter (BITS)
- Inductive boost converter (IITG)

Phase 3

- Multi-band impedance matching network (BITS)

Phase 4

- Cold start (IITG)
- DC-DC converter (BITS)
- Oscillator and calibration circuit (IITG)

Phase 5

- Charger architecture

Phase 6

- Assembly, testing and validation

Objectives

Design

- ❖ A multi-band impedance matching network
- ❖ RF-DC converter
- ❖ DC-DC converter
- ❖ Battery management circuit

Expected Outcomes

- ❖ Complete self-powered multiband RF energy processing prototype for handheld wireless electronic devices
- ❖ At least three high impact research papers, few international conference papers, and at least one patents