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(54) **BATTERY-OPERATED WIRELESS-COMMUNICATION APPARATUS AND METHOD**

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(57) **ABSTRACT**

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A combined battery and wireless-communications apparatus and method. In some embodiments, the apparatus includes a support, a first conductive layer deposited on a first surface area of the support, a thin-film battery including a cathode layer, a solid-state electrolyte layer, and an anode layer deposited such that either the anode layer or the cathode layer is in electrical contact with the first conductive layer, an antenna mounted to the support structure, and an electronic communications circuit mounted to the support and electrically coupled to the battery and the antenna to transceive radio communications. Other embodiments include an energy-receiving device mounted to the support structure, and an electronic communications circuit mounted to the support structure and including a recharging circuit, the recharging circuit electrically coupled to the battery and the energy-receiving device to recharge the battery using energy received by the energy-receiving device.

(73) Assignee: **Integrated Power solutions Inc.**

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