Inductively-Charged and Temporarily Self-Sufficient Operating Sensor Using Standard RFID-HF-Technology

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Abstract

This paper describes an RFID-sensor-system which can operate temporarily self-sufficient (autonomous). The system records environmental sensor data using one or more various sensors. The sensor data is transferred wirelessly using standard (ISO 15693) HF-RFID technology, meaning that the sensor data is temporarily stored into the tag and read out by any standard HF-RFID reader system. As the system was designed not to use any external power supplies (e.g. a battery) the RFID-sensor-system is charged inductively using standard readers. These enumerated properties lead to a system which is able operate in harsh environments with the demand for monitoring environmental data.