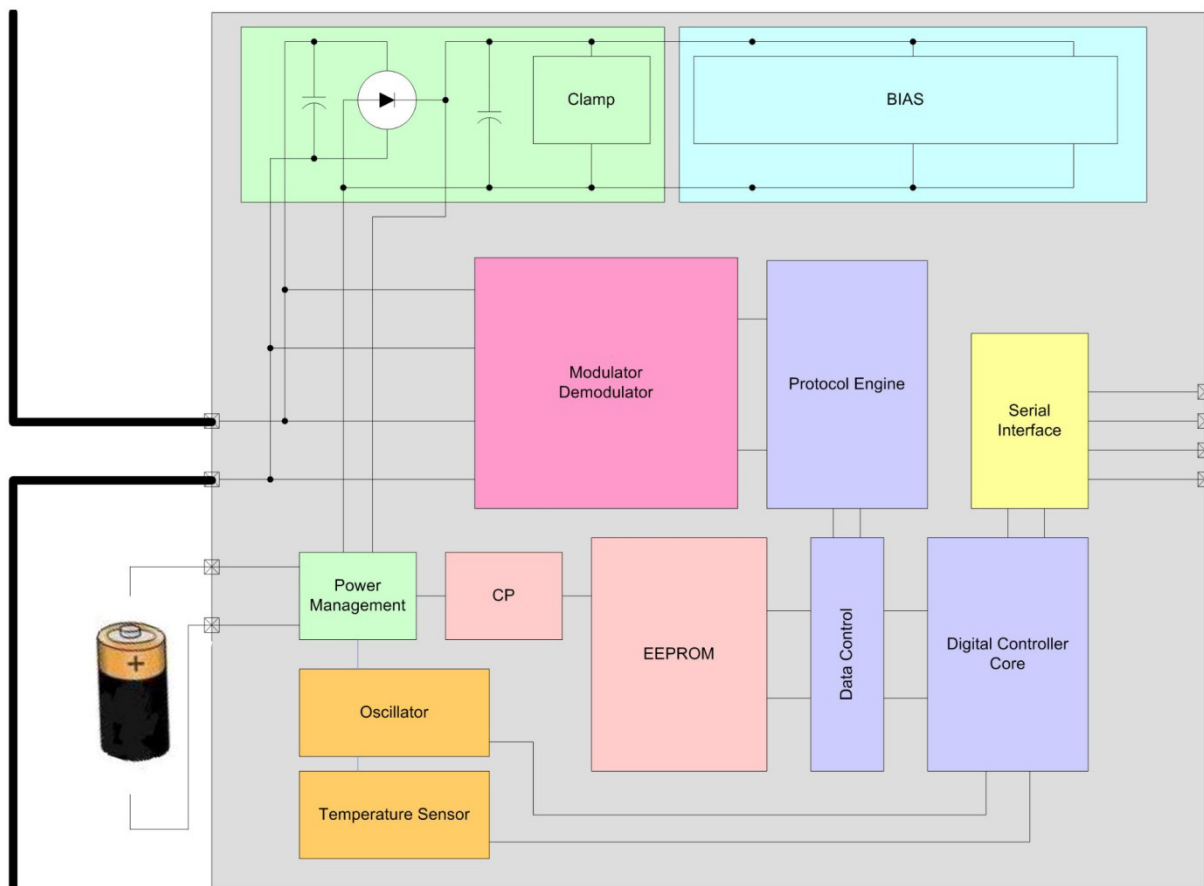


PE3001 UHF-RFID Sensor Data Monitoring IC

The PE3001 widens the potential of RFID and enables new applications with cost and performance optimized products. Using this IC, data monitoring systems fit on a smart label and replaces classic complex, multi-component solutions. With its integrated temperature sensor and the standard interface, the PE3001 represents a sensor data monitoring system-on-chip.

Description

The PE3001 is an EPC-Class1-Gen2 transponder chip, with strictly EPC function and an expansion to measure and monitor sensor data. The basic version features an internal temperature sensor. A serial interface with a programmable structure allows the connection to external sensors and other components. An external battery is used to supply the monitor process outside the RF field, while the RF communication is supplied via power extraction from UHF field (passive). The configuration and calibration data are defined in an EPC compliant organized non-volatile memory.



PE3001 block diagram

Features

- Passive UHF transponder chip, protocol compliant to „EPC Class 1 Generation 2 UHF RFID Version 1.0.9”
- Monitoring of time and (chip) temperature over a defined interval and storing in on-chip EEPROM with user defined parameters (event and timing controlled)
- Supply of IC over RFID field and/or connected battery, read and write of EEPROM without battery possible
- 8kBit password protected EEPROM read- and writeable over UHF field and data monitor
- Connection of external functions over SPI interface (μ C and display and/or sensors)

Applications

- Temperature curve tracing for sensitive grocery products and pharmaceutical product logistic (blood and plasma preservation)
- Long range biunique item identification
- Observation of hazardous materials
- With optional external sensors: humidity data surveillance (i.e. paper industry, chemicals), pressure and shock or tilt monitoring of sensitive equipment and appliances

Parameters

• operating frequency	860 .. 960 MHz
• standard conformity	EPC Class1 Gen2
• battery supply voltage (typ)	1.5 V
• power consumption (max)	5 μ W
• internal EEPROM size	512x16
• operating temperature	-40 .. 85 °C
• internal sensor precision	up to \pm 0.5 K
• timer accuracy	\pm 3 %
• read sensitivity (typ)	-6 dB
• write sensitivity (typ)	-4 dB

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