

Project Note

RFID Hand Reader to Record Book Holdings in Libraries

Development of a RFID hand reader which records book holdings or finds misplaced books in libraries by RFID. Zühlke only needs two months for the development from concept to prototype.

Task

Bibliotheca RFID Library Systems AG in Zug markets radio frequency identification (RFID) systems for book management in libraries. The task was to develop a hand reader to record the book holdings in a library or to find misplaced books. The scanner was to consist of a hand antenna for detecting the transponders and an RFID reader for digitising and converting the HF signals. A PDA was to be used for local storage and visual display of the recorded book data. The device was to have its own power unit to allow portable operation and an operating time of 2 hours.

Implementation

The first step in the initial design phase was to define the system components to be integrated in the device being developed. A high quality and ergonomic shape for the housing parts assured simple operation was also specified in detail in this development step.

The design phase was documented in a clearly structured way, providing a basis for subsequent implementation. During the prototype phase, two devices were built for field tests in libraries. The plastic housing parts were produced in a molding process in silicone molds. A softtouch paint coating enhanced the high quality design and assured an optimum appearance. The development phase also involved integrating the electronic PCBs (RFID reader/power management) and the batteries for operation independent of the mains and optimum wiring in the housing.



Technical Data

RFID carrier: 13.56MHz / ISO 15693

Transmission output: 2W

Battery: NiMHd, 3850mAh, C/4 charge

Tools: PROEngineer 2001, Orcad

PDA: IPAQ PocketPC, Win CE application

Customer Benefits

Zühlke's extensive expertise in construction/design and in hardware development (analog/digital), coupled with a clearly structured development process, allowed the device to be developed from idea to prototype in just 2 months.

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