

RFID – chips with no battery, read at a distance

Upcoming episode

How can a chip with no battery be read several metres away? A walk through RFID – the three parts, the frequency bands, passive and active tags, how it differs from a barcode, why metal and liquid ruin things, and why the technology did not take over everything after all.

MAIN TOPICS

- The three parts of an RFID setup
- How a chip with no battery manages to answer
- The frequency bands, and why the choice decides everything
- Passive, active and semi-passive tags
- RFID against the barcode – what the difference actually is
- Metal and liquid – the physics that sinks projects
- Read rate, and why it never reaches a hundred per cent
- RFID, NFC, BLE and UWB – which is which
- What it is actually used for
- Privacy and the criticism
- Why the hype around 2005 did not come true

QUESTIONS THIS EPISODE ANSWERS

- What is RFID, and how does it work?
- How can a chip answer without having a battery?
- What is the difference between LF, HF and UHF?
- What is the difference between passive and active tags?
- What separates RFID from a barcode?
- Why does RFID work badly on metal and liquid?
- Why do you never read all the tags?
- What is the difference between RFID, NFC, Bluetooth and UWB?
- Where is RFID used today, and where has it not caught on?
- Is RFID a privacy problem?

KEY POINTS

- A passive tag has no battery – it borrows energy from the reader and answers by reflecting the signal.
- The choice of frequency decides the range, and it is the most important decision in an RFID project.
- RFID needs no line of sight, and that is the real difference from a barcode.
- UHF is the band for logistics – but the frequency is not the same in Europe and the United States.
- Metal reflects and liquid absorbs. The physics decides whether a project can succeed.

- The read rate never reaches a hundred per cent. The solution has to cope with that.
- NFC is a relative of RFID. Bluetooth and UWB are something else.
- The hype around 2005 collapsed on tag price and read reliability, not on the idea.

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