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2.3. RFID tag antennas using an inductively coupled feed; 2.3.1. Analytical model; 2.3.2. Antenna design and results; 2.4. Combined RFID tag antenna for recipients containing liquids; 2.4.1. Module description; 2.4.2. Inductive coupling and antenna matching; 2.4.3. Antenna design; 2.4.4. Measurements of the initial tag; 2.4.5. Measurements with an empty and filled plastic recipient; 2.4.6. Combined antenna; 2.4.7. Discussion relative to the respect of the matching conditions; 2.5. Tag on metal; 2.5.1. Radiation efficiency of low-profile patch antennas; 2.5.2. Ultra-thin metal tags; 2.5.3. Thick metal tags; 2.5.4. Improved dipole designs on metallic surfaces; 2.6. Bibliography; CHAPTER 3. THE BACKSCATTERING TECHNIQUE AND ITS APPLICATION; 3.1. Backscattering principle of communication by between-base station and tag; 3.1.1. The forward link: communication from the base station to the tag; 3.1.2. The return link: communication from the tag to the base station; 3.2. The merit factor of a tag, σ or RCS; 3.2.1. Definition of the variation of the radar cross section, σ or RCS; 3.2.2. Estimation of σ as a function of θ ; 3.2.3. The variation $\sigma = f(\theta)$; 3.3. Variations of $\sigma = f(\theta)$

Sommario/riassunto

UHF Radio Frequency Identification (RFID) is an electronic tagging technology that allows an object, place or person to be automatically identified at a distance without a direct line-of-sight using a radio wave exchange. Applications include inventory tracking, prescription medication tracking and authentication, secure automobile keys, and access control for secure facilities. This book begins with an overview of UHF RFID challenges describing the applications, markets, trades and basic technologies. It follows this by highlighting the main features distinguishing UHF (860MHz-960MHz) an