



**Electromagnetic compatibility
and Radio spectrum Matters (ERM);
Short-Range Devices (SRD) for operation
in the 13,56 MHz band;
System Reference Document for Radio Frequency
Identification (RFID) equipment**

Reference

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Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

Executive summary

The present document analyses the potential and status of 13,56 MHz RF Identification Systems and the need for regulatory and standard improvements as:

- 13 MHz RFID systems cover the widest range of markets and applications of among the RFID families, this detailed in clause 6.1 and annex A.
- The prospects for the next decade for the 13,56 MHz RFID technology is that these RFIDs have the highest turnover and increase rate compared to other frequencies. The rate is estimated for about 50 % or higher. This is based on:
 - the mature and versatile 13,56 MHz technology is providing either large reading range with high data rates and bulk reading capability as well as very high data rates for the required safety and security features as requested by the recent EC mandate M436 for private/public and commercial use;
 - 13,56 MHz systems have the high level of installed systems covering various markets and applications;
 - the inductive near-field reader-tag communication system feature unique properties as highest spectrum efficiency because of the frequent re-use of the frequency band allowing dense reader operation (see clause 5.2).
- 13,56 MHz frequency band is harmonized in all three ITU regions which assures coverage of all markets.

Secondly recent developments in the evolution of the technology and ISO standards as well as developments/requirements in social, public, commercial and industrial areas have dictated the need for amending the spectrum mask in the ERC/REC 70-03, annex 9 as well as amending the EN 300 330-1 [i.2] for:

- higher operating ranges as well as higher data rates by
- improvement of the modulation level and spectrum width to meet the market needs. The modifications can be made by keeping the 13,56 MHz carrier to the present level of 60 dBμA/m as specified in the ERC/REC 70-03 [i.10] and modifying the transmitter mask.

Introduction

The present document has been developed to support the co-operation between ETSI and the Electronic Communications Committee (ECC) of the European Conference of Post and Telecommunications Administrations (CEPT) for internal reference within ETSI [i.1].