

ETSI TR 102 889-2 V1.1.1 (2011-08)

Technical Report

**Electromagnetic compatibility
and Radio spectrum Matters (ERM);
System Reference Document;
Short Range Devices (SRD);
Part 2: Technical characteristics for SRD equipment for
wireless industrial applications using technologies different
from Ultra-Wide Band (UWB)**

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Foreword

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

The present document is part 2 of a multipart deliverable covering Electromagnetic compatibility and Radio spectrum Matters (ERM); System Reference Document; Short Range Devices (SRD), as identified below:

- Part 1: "Technical characteristics for SRD equipment for wireless factory/industrial applications using ultra-wideband technologies";
- Part 2: **"Technical characteristics for SRD equipment for wireless industrial applications using technologies different from Ultra-Wide Band (UWB)"**.

Executive Summary

Industrial automation requires "robust" wireless technologies to be used for their critical wireless links in industrial applications.

The advantages of wireless are beneath savings of often complex and expensive cables, cable protection and plugs, the increased mobility and flexibility as well as the wear and tear free transmission medium. These advantages are particularly high in the area of:

- monitoring and mobile worker communication;
- wireless sensors and actuators at moving parts;
- setups that require flexibility in terms of tool or machine reconfigurations.

Different functions can be mastered substantially more efficient by a wireless network of data acquisition terminals, robotic type equipment or automated guided vehicles.

For the sensor and actuator type of applications in industrial automation, the main requirement is the real time behaviour:

- Determinism for process industry.
- Low latency and determinism for factory automation.

Real time means a maximum response time defined by the type of application.

E.g. on the factory floor of discrete manufacturing, very short latencies of a few ms and a very high availability (high robustness) is necessary in order to avoid interruptions in the manufacturing process.

In higher levels of the automation hierarchy e.g. at the control or enterprise level, the data volume rises, so throughput, security and availability becomes more important, but real-time communication requirements decrease.