

RFID Standards und Regulierungen

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Standardisierungsorganisationen

Verpflichtende Standards

- è Funkvorschriften
- è Health & Safety Standards

Freiwillige Standards

- è Technologiestandards
- è Datenstandards
- è Konformitätsstandards
- è Anwendungsstandards



Standardisierungsorganisationen (1)



**International
Telecommunications
Union**



**European Committee
for Electrotechnical
Standardization**



**International
Organization for
Standardization**



**EUROPEAN
COMMITTEE FOR
STANDARDIZATION**



**European Conference of
Postal and
Telecommunications
Administrations**



**European
Telecommunications
Standards Institute**

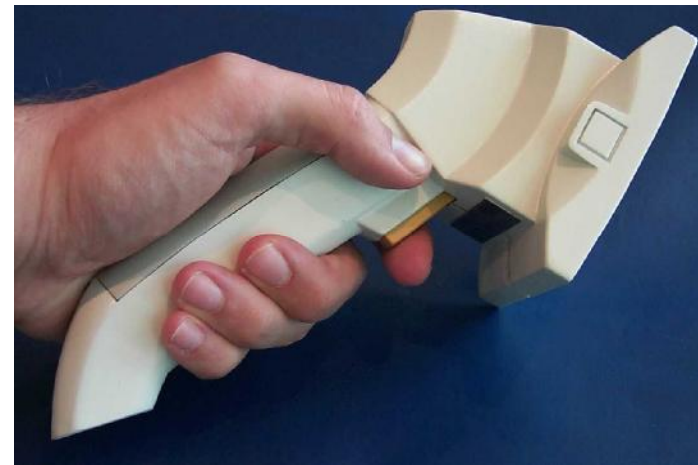
Standardisierungsorganisationen (2)



Verpflichtende Standards und Regulierungen

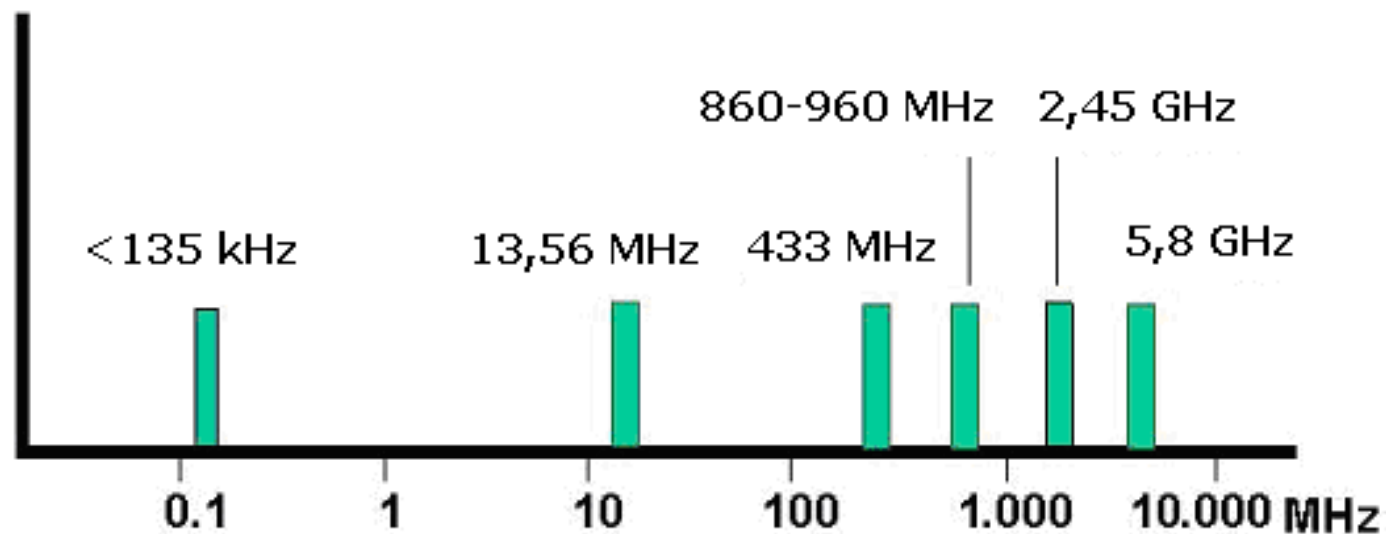
Verbindliche Vorschriften für RFID Systeme

- è Funkvorschriften
 - è Spektrum und Übertragungsparameter
- è Elektromagnetische Felder



Verpflichtende Standards und Regulierungen

Weltweite RFID Frequenzen



Verpflichtende Standards und Regulierungen

Funkvorschriften (EU)

è Short Range Devices

è EN 300220: 25 MHz ... 1000 MHz

è EN 300330: 9 kHz ... 30 MHz

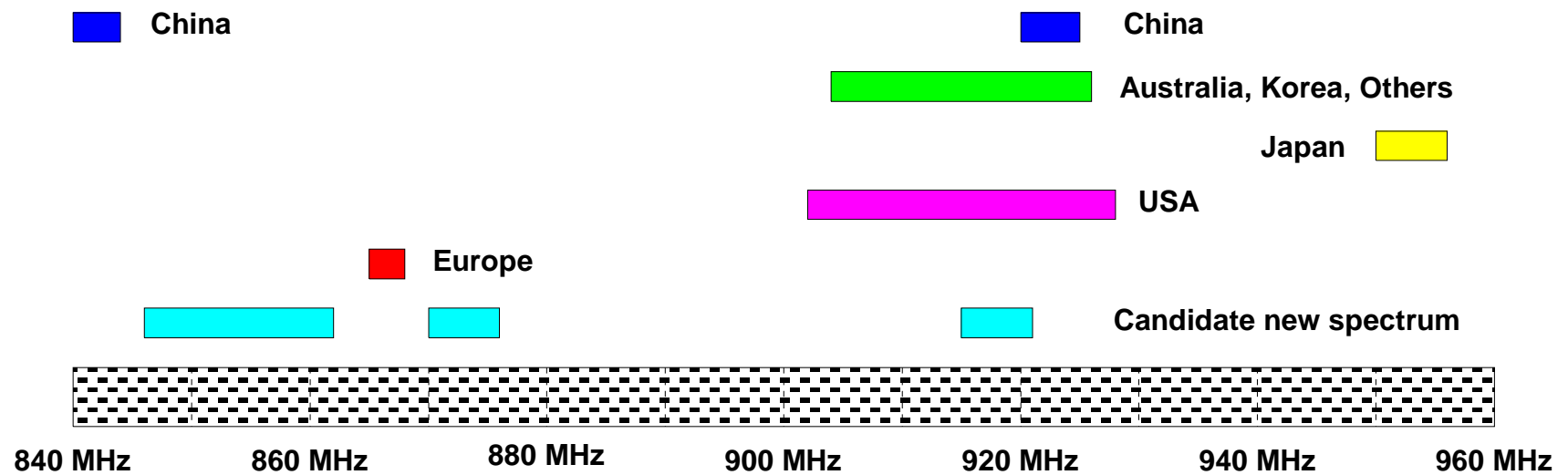
è EN 300440: 1 GHz ... 40 GHz

è RFID

è EN 302208: 865 MHz ... 868 MHz

Verpflichtende Standards und Regulierungen

UHF Frequenzbänder



Verpflichtende Standards und Regulierungen

UHF Funkvorschrift EN 302208

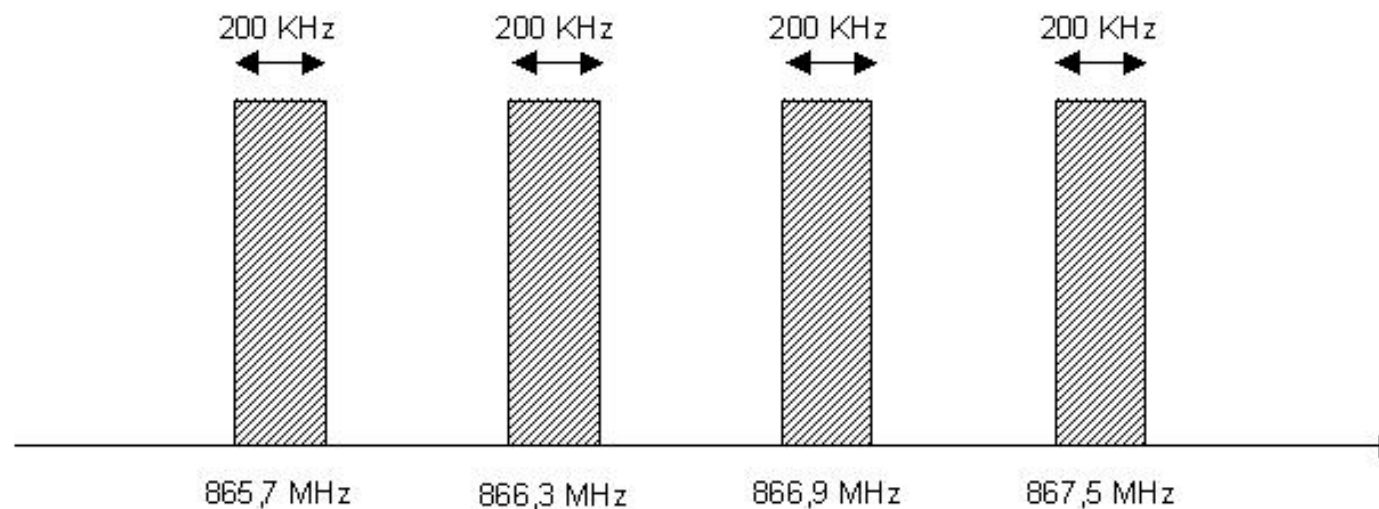
- è 4 Sendekanäle für Reader im Bereich von 865 MHz ... 868 MHz
- è 200 kHz Kanalbandbreite
- è maximale abgestrahlte Leistung 2 Watt e.r.p.
- è Tagantwort spektral von der Readerübertragung getrennt

- è **Der gleichzeitige Betrieb beliebig vieler Reader auf einem Kanal ist möglich (Dense Reader Mode).**

Verpflichtende Standards und Regulierungen

UHF Funkvorschrift EN 302208

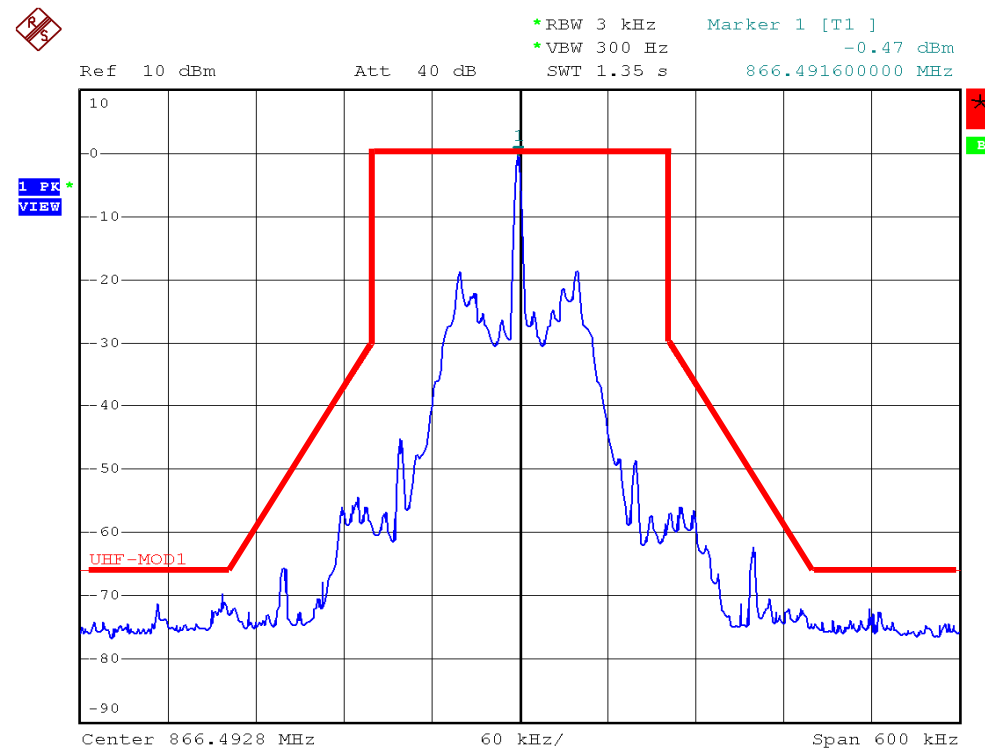
è 4 Kanalplan



Verpflichtende Standards und Regulierungen

UHF Funkvorschrift EN 302208

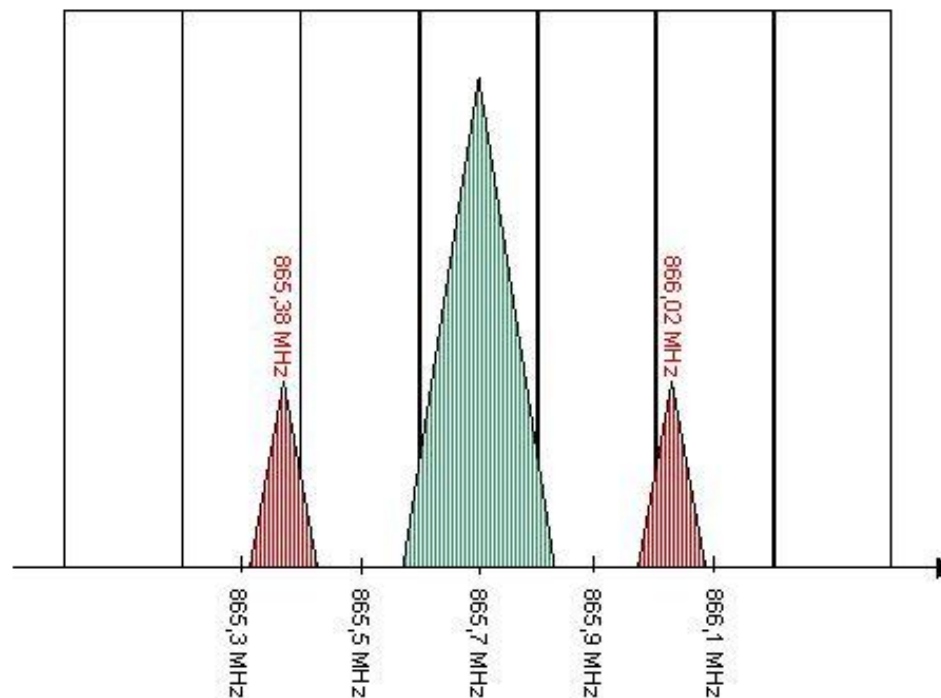
è Spektrummaske



Verpflichtende Standards und Regulierungen

UHF Funkvorschrift EN 302208

è Trennung von Reader und Tagsignalen



Verpflichtende Standards und Regulierungen

Vorschriften zu elektromagnetischen Feldern

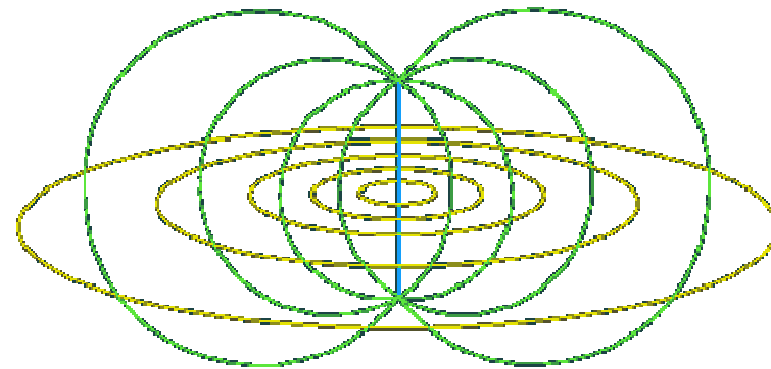
- è ICNIRP Guidelines - Internation Commission on Non-Ionizing Radiation Protection
- è EC Directive 1999/519/EC
- è EN50364
- è EN50357



Verpflichtende Standards und Regulierungen

Vorschriften zu elektromagnetischen Feldern

- è beschäftigen sich mit gesundheitlichen Aspekten
 - è beschreiben Sicherheitsvorkehrungen
 - è legen Grenzwerte für die maximale Strahlenbelastung fest
 - è definieren Messmethoden zur Überprüfung und Einhaltung der Grenzwerte



Freiwillige Standards

Typen von Standards

- è Technologiestandards
 - è Kommunikations- und Luftschnittstellenstandards

- è Datenstandards
 - è welche Daten werden im Transponder abgelegt?
 - è Wie erfolgt die Speicherung der Daten?



Freiwillige Standards

Typen von Standards

- è Konformitätsstandards
 - è Kriterien zur Beurteilung der Übereinstimmung mit Standards
 - è Testmethoden

- è Anwendungsstandards
 - è Anforderungen für spezifische Anwendungen



Freiwillige Standards

Bedeutende Standardisierungsorganisationen



Lokale Organisationen
DIN, ANSI ...

- Technologiestandards
- Testmethoden
- Datenprotokolle



Lokale Organisation
GS1 Germany ...

- Technologiestandards
- Testmethoden
- Datenprotokolle

Freiwillige Standards

ISO Technologiestandards

- è Identification Cards (Smart Label)
 - è ISO 15693 - 13.56 MHz
 - è ISO 14443 - Proximity Integrated Circuit Cards

- è ISO 18000 Air Interface
 - è Part 1 Generic Parameter
 - è Part 2 < 135 kHz
 - è Part 3 13.56 MHz
 - è Part 4 2.45 GHz
 - è Part 6 860 MHz ... 960 MHz
 - è Part 7 433 MHz



© Metro

Freiwillige Standards

EPCglobal Technologiestandards

è RFID for Item Management

- è Class 1 Generation 2 UHF RFID Protocol for Communications at 860 MHz ... 960 MHz
- è HF Version 2 RFID Protocol for Communications at 13.56 MHz



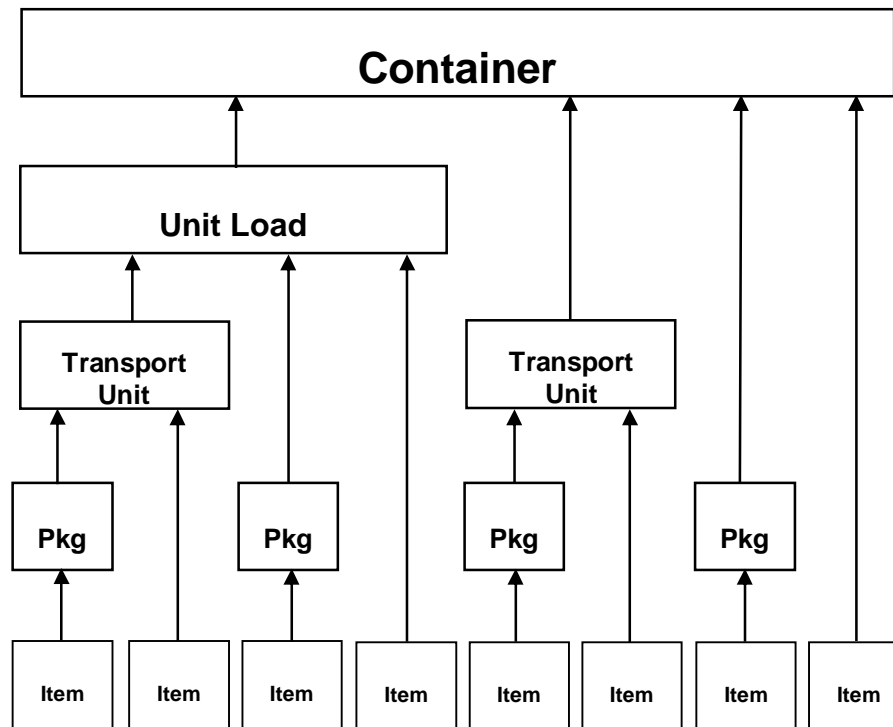
Freiwillige Standards

ISO Datenprotokolle

ISO/IEC Nummer	Titel	Status
15963	RFID for Item Management – Unique Identification of RF Tag	Published
15961	RFID for Item Management – Data Protocol: specification of transfer syntax, application commands	Published
15962	RFID for Item Management – Data Protocol: encoding of the transfer syntax, mapping in logical memory	Published
24791	RFID For Item Management - Software System Infrastructure	Under Development

Freiwillige Standards

Anwendungsstandards in der Logistik



à Containers (ISO 17363)

à Loading Units (ISO 17363)

à Transport Units (ISO 17365)

à Packaging (ISO 17366)

à Goods, Items (ISO 17367)

Vielen Dank für Ihre Aufmerksamkeit

Fragen?

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