資料920MHz帯作2-5

ETSI TS 102 902 V1.1.1 (2011-02)

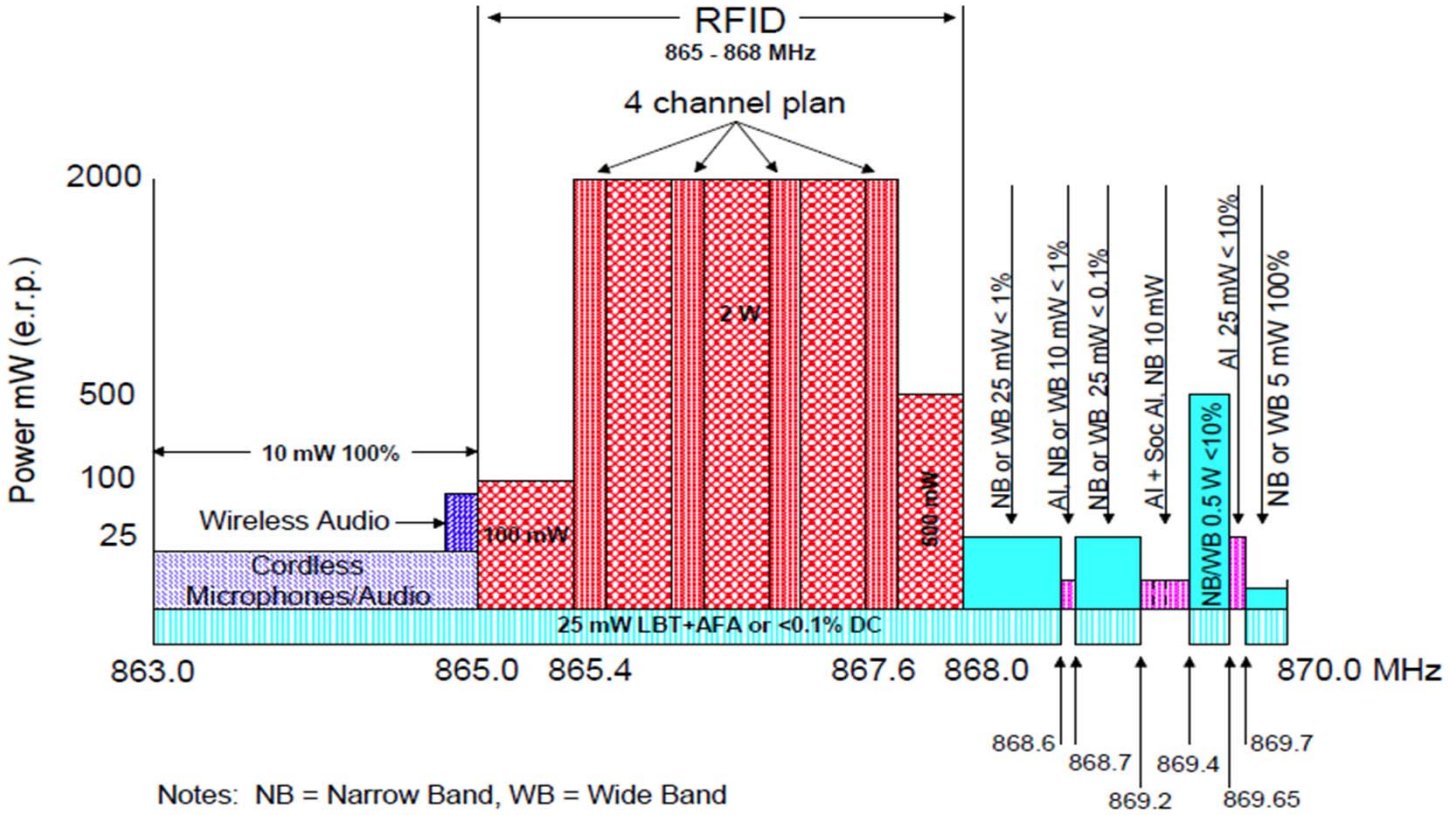
Technical Specification

欧州電気通信標準化機構
(European Telecommunications Standards Institute, **ETSI**;)

ユビキタスネットワーキングフォーラム
電子タグ高度利活用部会　無線通信専門委員会
UHF**帯電子タグシステム標準化**WG

平成23年3月8日
社団法人日本自動認識システム協会

1. 現在のUHF帯RFIDの欧州規格について



Notes: NB = Narrow Band, WB = Wide Band

Band 869.2 - 869.4 sub-divided as follows:-

869.2 - 869.25 Social alarms < 0.1%

869.25 - 869.3 Alarms <0.1%

869.3 - 869.4 Alarms < 1%

NOTE: For latest and more detailed information consult the latest version of the ERC Recommendation 70-03 [i.10].

Figure A.1: Overview of existing SRD band allocations according to ERC Recommendation 70-03 [i.10]

2. 現在検討されてるUHF帯の技術仕様
（1）周波数計画

Table 1: Proposal for high performance RFID interrogators

Frequency bands	Power	Duty cycle	Maximum Channel bandwidth	Notes
Interrogators: 915 MHz to 921 MHz Interrogator centre frequencies f_c 915,5 MHz 916,7 MHz 917,9 MHz 919,1 MHz 920,3 MHz	≤ 4 W e.r.p. on a single interrogator channel for each individual interrogator	No mandatory limit for transmitter on-time. However interrogators will not be allowed to transmit longer than is necessary to perform the intended operation	f_c ± 200 kHz	Interrogators may operate in any of the four high power channels
Tags: Between 915 MHz to 925 MHz	< -10 dBm e.r.p. per tag		f_c ± 1 000 kHz for tag response	
NOTE: f_c are the carrier frequencies of the interrogators.				

Figure 1 shows the current draft proposal for high performance RFID interrogators as in TR 102 649-2 [i.3].

Note situation for SRDs will be very different since they occupy the low power channels and their power is limited to 25 mW.

（2）チャネルプラン

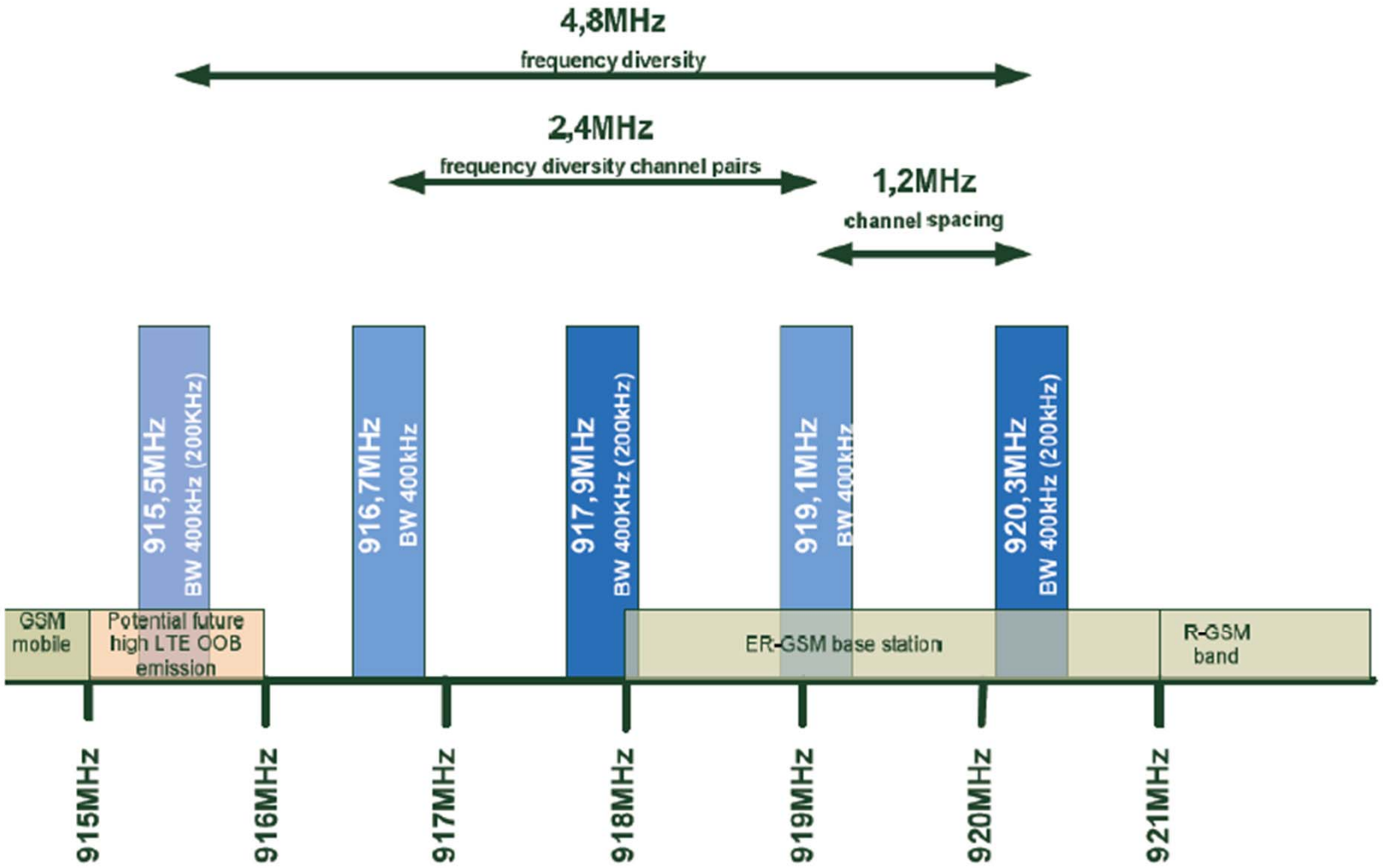


Figure 1: Revised proposal for high performance RFID applications

（3）チャネル幅

The current performance of UHF RFID in the logistic and supply chain market in Europe is limited by the channel bandwidth of only 200 kHz. This restricts UHF RFID in Europe to a reading rate of about 200 tags per second versus a need for 500 tags to 1 500 tags per second for future applications.

- The bandwidth for each high power channel should be ~400 KHz wide to allow a Tari of 6,25 µs as specified in ISO/IEC 18000-6 [i.2].
- The channel for the tag response should be 0,8 MHz on both sides of each high power channel. This allows a return link frequency of 640 KHz, which is equivalent to a data rate of 320 kbps.

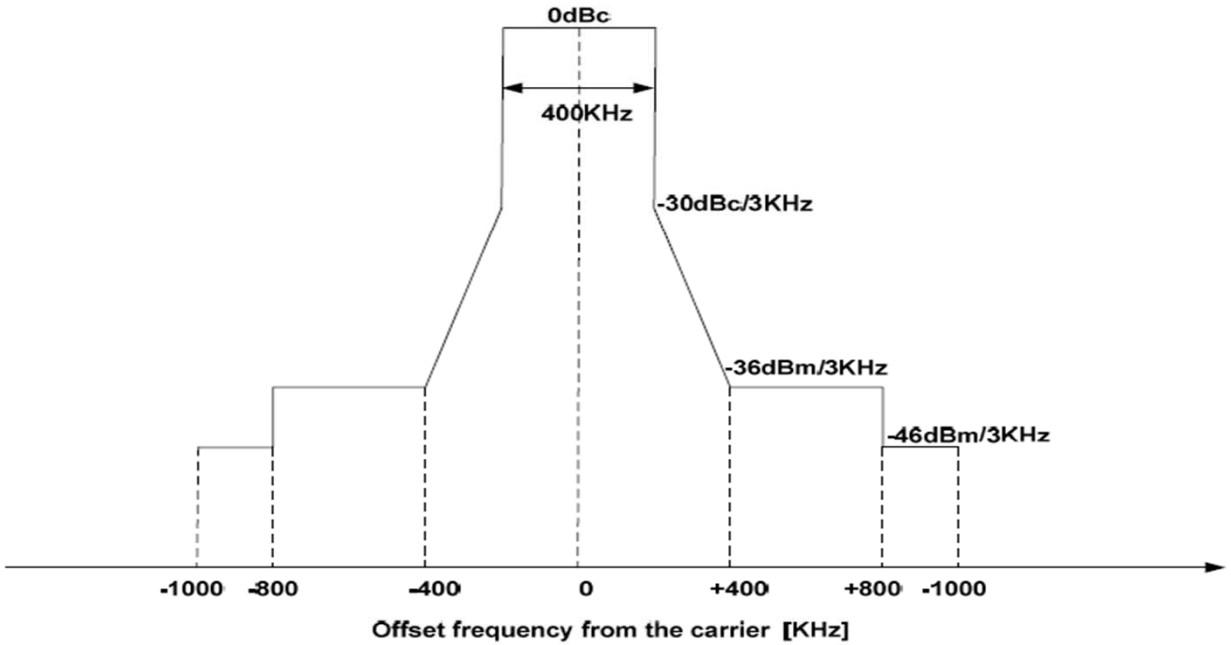


Figure C.2: High performance interrogator channel mask

Receiver parameters:

1) The beamwidth of the antenna(e) in the horizontal orientation should be ≤ 70 degrees.
2) The interrogator should identify a tag with a power level of -65 dBm.
3) The interrogator should identify a tag with a power level of -62 dBm in the presence of an un-modulated blocker with a power level of -35 dBm at a frequency that lies +2 MHz or -2 MHz away from the carrier frequency of the interrogator.
4) The receiver of the interrogator should have a bandwidth of (fc ± 1 MHz).