
**IEEE P802.11
Wireless LANs**

Survey of 2.4 GHz device characteristics

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Abstract

Project Team 24 of the Spectrum Engineering Group of the CEPT has been asked to allow the use of the 2.4 GHz band for RFID devices, using spread spectrum, but with 500 mW.

To make the necessary calculations for co-existence with the existing services, they are asking for the characteristics of the current users of the band.

If you have devices operating in the 2400-2483.5 MHz band in Europe, please fill in the attached survey form and return it to the person mentioned on page 2.

Please also send me a copy for information.

Thanks.

Date

Name

Address

Subject: Microwave RFID systems using Spread Spectrum Technology

Dear Sir or Madam:

ETSI (European Telecommunications Standards Institute) is studying the use of the 2.45 GHz ISM band for Radio Frequency Identification (RFID) applications. To develop a thorough study, it is important that a complete list of 2.45 GHz systems technology and applications are identified. The study will be used as input during discussions regarding power levels and frequency availability in the future.

Recent surveys by ERO (European Radiocommunications Office) and ETSI (European Telecommunications Standards Institute) indicate a wide and varied use of this band. It is identified that some new RFID systems use spread spectrum technology with a radiated power of up to 0,5 -2 W EIRP. Compatibility between these systems and other already existing radio services must be determined before such systems can be allowed.

Preliminary investigation has shown that difference between indoor and outdoor applications and use of high directional antennas designed for low horizontal radiated power density may be important parameters for a future European regulation. Therefore, additional market information is required to effectively determine the compatibility with existing radio systems.

Attached you will find a questionnaire which was designed to be easily completed and returned to the address given below. The next meeting of the relevant working group is scheduled for mid April, 1998. For this reason, responses returned by April 6, 1998, will be considered for inclusion in the final study.

Please return questionnaire to:

Mr. S. Bolt Sørensen
Bolt Consult
Lindetoften 23
2630 Taastrup
Denmark

Phone: + 45 43 52 68 08

Fax: + 45 43 71 70 08

E-mail: boltconsult@inet.uni2.dk

In addition to your response, please provide additional compatibility studies that you have conducted or have collected from publicly-available resources.

Also, we would appreciate receiving samples of your 2.45 GHz systems for testing. Please identify your willingness to participate in future testing.

We thank you for your co-operation and prompt response.

Kind Regards,

Sigurd Bolt Sørensen
Vice chairman ETSI ERM-WG/RP08

Parameters for Compatibility Study of Microwave RFID Systems using Spread Spectrum Technique.

Application details ⁵ (Please describe) (Add page(s) if required)	TX Peak power EIRP (dBm)	Horizontally radiated TX power density (dBm/1MHz at 30 metres)	TX Duty cycle ⁴ (%)	Receiver Sensitivity (dBm & BER)	In-door or Out-door (I or O) If both: I % / O %	TX Antenna Gain (dB) & directivity (degrees)	D=DSSS ¹ F=FHSS ² O=Other (Explain)	Freq. Band (GHz)	Band Width (MHz)	Compatibility tests with other Services ³ Y=Yes; N=No; U=Unknown	Comments (Attach separate page(s) if required)
1.											
2.											
4.											
5.											

NOTES:

1. For DSSS: P/N Code
2. For FHSS: Number of frequency hops and increment
3. If compatibility tests have been completed, please attach a copy
4. Min. acceptable duty cycle, defined as $\frac{\text{total transmitter on - time}}{\text{total transmitter off - time}}$ averaged over any 1 hour period
5. Out-door automotive applications shall be described at separate lines

COMMENTS:

Name of company completing this survey _____

Name of person completing this survey _____

Contact number for person completing this survey (phone / email) _____