

# EUROPEAN RADIOCOMMUNICATIONS COMMITTEE

ERC Decision  
of 12 March 2001  
on harmonised frequencies, technical characteristics and  
exemption from individual licensing of  
Short Range Devices used for inductive applications  
operating in the frequency bands  
9 - 59.750 kHz, 59.750 - 60.250 kHz  
60.250 - 70 kHz, 70 - 119 kHz, 119 - 135 kHz

(ERC/DEC/(01)13)





## **EXPLANATORY MEMORANDUM**

### **1 INTRODUCTION**

The term "Short Range Device" (SRD) is intended to cover radio equipment providing uni-directional or bi-directional communication and which has low capability of causing interference to other radio equipment. SRDs use either integral, dedicated or external antennas and all modes of modulation are permitted subject to available standards or technical specifications. Inductive applications are specific SRD's used for car immobilises, animal identification, alarm systems, cable detection, waste management, personal identification, wireless voice links, access control, proximity sensors, anti-theft systems, including RF anti-theft induction systems, data transfer to handheld devices, automatic article identification, wireless controls systems and automatic road tolling as examples. Usually, SRDs use frequency bands already allocated to other services. SRDs generally cannot interfere with nor claim protection from these services.

Licensing is an appropriate tool for Administrations to regulate the use of radio equipment, ensure the most effective use of the frequency spectrum and to avoid harmful interference. However intervention from the Administrations as far as the installation and use of equipment is concerned needs to be proportionate. Administrations and especially users, retailers and manufacturers will benefit from a more deregulated system of authorising the use of radio equipment.

### **2 BACKGROUND**

In 1997, the ERC adopted Recommendation the 70-03 to deal with SRDs covering many categories of different applications, among which are telecommand and telecontrol, telemetry, alarms, speech and video transmission. For its part, ETSI has developed standards for the majority of these devices.

The ERC Recommendation 70-03, together with these standards, has given a favourable legal framework to accompany the recent development of the use of SRDs.

To achieve the aim of taking a new step towards harmonised use of SRDs, it has been decided to transpose into ERC Decisions the frequency bands (together with the relevant technical characteristics) identified in the Recommendation 70-03. The harmonisation on a European basis would support the Directive 1999/5/EC (the R&TTE Directive).

It is generally agreed that installation and use of radio equipment may be exempted from individual licensing when the efficient use of the frequency spectrum is not at risk and as long as harmful interference is unlikely and usage is on a non-protected/non-interference basis. The Directive 1999/5/EC introduces the principle that individual licensing is only justified for reasons related to the effective/efficient use of the spectrum and the avoidance of harmful interference or matters relating to public health.

When radio equipment is subject to an exemption from individual licensing, anyone can install and use the equipment without requiring individual permission from the Administration. Furthermore, the Administration will not register the individual equipment. The use of the equipment can be subject to general provisions or general licence.

Within countries which have implemented the R&TTE Directive the conformity assessment, placing on the market and putting into service of Short Range Devices is governed by Directive 1999/5/EC (R&TTE). Thus this ERC Decision can not impede EEA countries and countries which have implemented the R&TTE Directive from fulfilling their obligations according to Community law.

This Decision describes the spectrum management requirements for and intends to provide for individual licence exemption for Short Range Devices used for inductive applications.

### **3 REQUIREMENTS FOR AN ERC DECISION**

The allocation or designation of frequencies for use by a service or system under specified conditions in CEPT member countries is laid down by law, regulation or administrative action. The ERC recognises that for SRDs in general and inductive applications in particular to pursue their successful development throughout Europe, manufacturers must be encouraged to make the necessary investments in these radiocommunication systems. It is therefore considered necessary to designate frequency bands within which inductive applications can be operated under specified conditions.

ERC/REC 01-07, adopted in 1995, listed harmonised criteria for the Administrations to decide whether an exemption from individual licence should be applied. The aim of this Decision is also to exempt inductive applications from individual licensing as they fulfil the criteria for exemption listed in ERC/REC 01-07.

Commitment by CEPT member countries to implement an ERC Decision will provide a clear indication that the required frequency bands will be made available on time and on a European-wide basis.

**ERC Decision  
of 12 March 2001**

**on harmonised frequencies, technical characteristics and exemption from individual licensing of  
Short Range Devices used for inductive applications operating in the frequency bands  
9 - 59.750 kHz, 59.750 - 60.250 kHz, 60.250 - 70 kHz, 70 - 119 kHz, 119 - 135 kHz**

(ERC/DEC/(01)13)

"The European Conference of Postal and Telecommunications Administrations,

*considering*

- a) that due to the increasing interest in the use of SRDs for a growing number of applications it is necessary to harmonise frequencies and regulations for these devices;
- b) that SRDs in general operate in shared bands and are not permitted to cause harmful interference to other radio services;
- c) that in general SRDs cannot claim protection from other radio services;
- d) that the CEPT Recommendation ERC/REC 70-03 on Short Range Devices identifies frequency bands for inductive applications;
- e) that European-wide harmonised use of frequencies would support the Directive 1999/5/EC (the R&TTE Directive);
- f) that the technical characteristics shown in Annex 1 have been chosen to ensure the best use of the bands identified in *Decide 1* by inductive applications, minimising interference between SRD equipment and sharing with other radio services operating in these bands;
- g) that the equipment referred to in this ERC Decision should comply with the relevant European Telecommunication Standards (EN 300 330) or equivalent technical specifications;
- h) that for frequency planning, frequency co-ordination and in handling interference complaints the national frequency management and enforcement authorities assume Short Range Devices used for Inductive applications comply with receiver performance characteristics given in the informative Annex (Annex 2);
- i) that the CEPT Recommendation ERC/REC 74-01 defines spurious emission limits for radiocommunication equipment;
- j) that when selecting parameters for new SRDs, which may have inherent safety of human life implications, manufacturers and users should pay particular attention to the potential for interference from other systems operating in the same or adjacent bands;
- k) that within the CEPT Administrations there is growing awareness of the need for harmonisation of licensing regimes;
- l) that national licensing regimes should be as simple as possible in order to minimise the burden on Administrations and users of equipment;
- m) that Administrations should work towards the exemption of relevant radio equipment from individual licensing based on harmonised criteria detailed in ERC/REC 01-07;
- n) that Administrations have the right to exercise spectrum/frequency management which may affect the number of service suppliers, in conformity with their international trade obligations and to European Community legislation as far as EU Member States are concerned;
- o) that allocation, assignment and technical co-ordination of frequencies must be done in an objective, timely, impartial, transparent and non-discriminatory manner, and should not be more burdensome than necessary under international rules, in particular, to ensure the efficient use of the frequency spectrum;

**DECIDES**

1. to designate the frequency bands  
9 - 59.750 kHz  
59.750 - 60.250 kHz  
60.250 - 70 kHz  
70 - 119 kHz  
119 - 135 kHz  
for the use of equipment for inductive applications which comply with the technical characteristics shown in Annex 1;
2. to exempt Short Range Device equipment used for Inductive Applications covered by this Decision from individual licensing;
3. that this Decision will enter into force on 12 March 2001;
4. that the CEPT Member Administrations shall communicate the national measures implementing this Decision to the ERC Chairman and the ERO when the Decision is nationally implemented.”

*Note:*

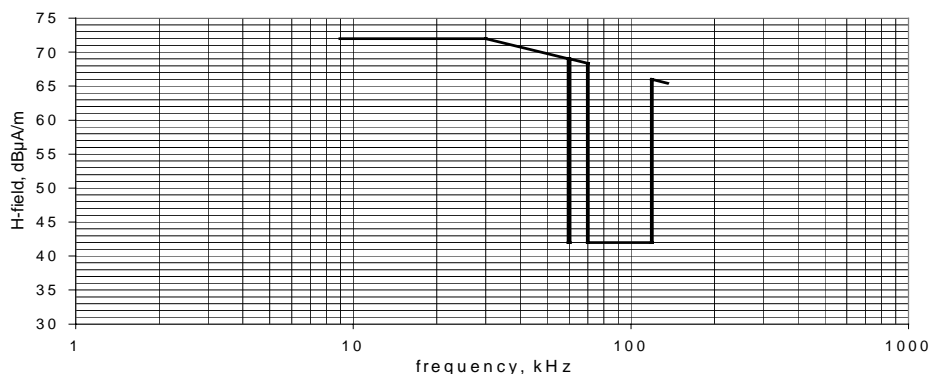
Please check the ERO web site ( [www.ero.dk](http://www.ero.dk) ) for the up to date position on the implementation of this and other ERC Decisions.

ANNEX 1

**Regulatory Annex: Technical characteristics of inductive applications using the frequency bands identified in *Decides 1***

Frequency Band	Field strength	Antenna	Channel Spacing	Duty Cycle (%)
9 – 59.750 kHz	72 dB $\mu$ A/m at 10 metres <sup>1</sup> (at 30 kHz descending 3 dB/oct)	Integral , Dedicated or external <sup>2</sup>	No channel spacing – whole stated frequency band may be used	No duty cycle restriction
59.750 - 60.250 kHz	42 dB $\mu$ A/m at 10 metres	Integral , Dedicated or External <sup>2</sup>	No channel spacing – whole stated frequency band may be used	No duty cycle restriction
60.250 - 70 kHz	72 dB $\mu$ A/m at 10 metres <sup>1</sup> (at 30 kHz descending 3 dB/oct)	Integral , Dedicated or external <sup>2</sup>	No channel spacing – whole stated frequency band may be used	No duty cycle restriction
70 – 119 kHz	42 dB $\mu$ A/m at 10 metres	Integral , Dedicated or external <sup>2</sup>	No channel spacing – whole stated frequency band may be used	No duty cycle restriction
119 - 135 kHz	72 dB $\mu$ A/m at 10 metres <sup>1</sup> (at 30 kHz descending 3 dB/oct)	Integral , Dedicated or external <sup>2</sup>	No channel spacing – whole stated frequency band may be used	No duty cycle restriction

The maximum allowed H-field is illustrated in Figure 1 below



**Figure 1.** 9-135 kHz magnetic field strength limits at 10-metre measurement distance

<sup>1</sup> In the case of loop antennas (integral or dedicated) with an area between 0.05 m<sup>2</sup> and 0.16 m<sup>2</sup>, the field strength is reduced by 10 \* log (area/0.16 m<sup>2</sup>); for an antenna area less than 0.05 m<sup>2</sup> the field strength is reduced by 10 dB.

<sup>2</sup> In case of external antennas only loop coil antennas shall be employed

ANNEX 2

*Informative Annex: Additional technical characteristics with which inductive applications using the frequencies identified in Decides 1 are recommended to comply to ensure efficient use of the spectrum*

Note: In this ERC Decision this annex is for information only; however, in cases where the relevant harmonised standard applicable to inductive applications contains essential requirements for transmitter or receiver parameters, this harmonised standard prevails upon the following information. For the conditions and methods of measurement refer to the relevant ETSI standard (EN 300 330-1).

**Transmitters:**

Spurious emissions should comply with those specified in ERC Recommendation 74-01.

**Receivers:**

1. Blocking or desensitisation

The blocking ratio, for any frequency within the specified ranges, should not be less than the values given in table below, except at frequencies on which spurious responses are found.

**Receiver blocking or desensitisation limits**

9 – 300 kHz	
Frequency offset (kHz)	Limit
All	70 dB

2. Spurious radiation:

The spurious components should not exceed the generated H-field dB A/m values at 10 m according to the following table:

Frequency 9 kHz < f < 10 MHz
6 dBµA/m descending 3 dB/oct