ECC Decision (15)05

The harmonised frequency range 446.0-446.2 MHz, technical characteristics, exemption from individual licensing and free carriage and use of analogue and digital PMR 446 applications

Approved 3 July 2015

EXPLANATORY MEMORANDUM

1 INTRODUCTION

The free circulation of radio communication products and the provision of equipment in Europe for radio communications are only achievable if there are common regulations throughout Europe regarding the availability of frequency bands, harmonised technical conditions and border crossing procedures. The main requirements for fulfilling these objectives for analogue and digital PMR 446 radio equipment are the Europe-wide availability of a suitable frequency band, harmonised technical conditions and the implementation of national regulations based on the Harmonised European Standards EN 300 296-2, EN 300 113-2, and EN 301 166-2.

PMR 446 is intended to operate on collective frequencies shared by many users on an uncoordinated basis.

The equipment is hand portable (no base station or repeater use) and uses integral antennas only in order to maximise sharing and minimise interference. PMR 446 equipment operates in short range peer-to-peer mode and cannot be used neither as a part of infrastructure network nor as a repeater.

The transition to digital technology in all sectors of radio communications is required in order to meet the user expectations whilst improving spectrum efficiency.

PMR 446 applications typically have a simplified functionality with a set of channels and a specification that allows usage to be exempted from individual licensing.

Industry research has indicated that the provision of digital equipment including a small number of key features would increase the value that the users can derive from the equipment, and a significant increase in demand could therefore be expected.

Some of these key features are:

1. Improved audio quality;

2. Improved battery performance;

3. Improved quality of service extending out to the range limit (rather than greater absolute range);

4. Data communication, typically short message.

Finally, it is important that the corresponding frequencies are harmonised throughout Europe for both analogue and digital PMR 446 applications. In addition, Class 1 equipment status is highly recommended in order to place PMR 446 equipment on the market and to be put into service without restrictions.

In this context, this ECC Decision provides the necessary mechanism for CEPT administrations to continue their commitment to the frequency band 446.000-446.200 MHz for both analogue and digital PMR 446 radio equipment.

A key driver in this proposed change is to improve spectral efficiency so that all the permitted equipment should be 6.25 kHz (or equivalent) per voice channel.

This ECC Decision repeals the earlier ERC/DEC/(98)25 and ECC/DEC/(05)12. It gives clear advice to industry, retailers and users throughout Europe, that these changes should take place in Europe within a common timeframe.

2 BACKGROUND

The frequency band 446.0-446.1 MHz has been designated for analogue PMR 446 by ERC/DEC/(98)25 of 23 November 1998 and was amended 1 June 2012 to include some additional features in order to reduce the risk of harmful interference. The frequency band 446.1-446.2 MHz has been designated for digital PMR 446 by ECC/DEC/(05)12 of 28 October 2005.

The PMR 446 radio application is intended for radio communications with transmission and reception taking place on the same channel (single frequency, simplex traffic).

PMR 446 radio equipment is exempted from individual licensing and anyone can use the radio equipment without any prior individual permission from the administration.

The designation of a harmonised band has formed the basis for the free circulation and use of PMR 446 within Europe and has also facilitated the mutual recognition of conformity assessment.

ETSI has already developed the harmonised European standards EN 300 113-2 and EN 300 296-2 (12.5 kHz bandwidth) and EN 301 166-2 (6.25 kHz bandwidth) for radio conformance purposes.

3 REQUIREMENT FOR AN ECC DECISION

The allocation or designation of frequency bands for use by a service or system under specified conditions in CEPT administrations is laid down by law, regulation or administrative action. ECC Decisions are required to deal with the radio spectrum related matters and for free circulation and use of equipment throughout Europe. The free circulation and use of radio equipment and the provision of Pan European services will be greatly assisted when all CEPT administrations exempt the same categories of radio equipment from licensing and apply -to achieve that- the same criteria.

The harmonisation on a European basis supports the Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity. A commitment by CEPT administrations to implement this ECC Decision will provide a clear indication that the required frequency bands are available on a European-wide basis, for both analogue and digital PMR 446 equipment.

ERC/REC 01-07, revised in 2004, listed harmonised criteria for the administrations to decide whether an exemption from individual license should be applied. The aim of this Decision is also to exempt PMR 446 equipment from individual licensing as it fulfils the criteria for exemption listed in ERC/REC 01-07 and to allow the carriage and use of the equipment within CEPT countries.

ECC DECISION OF 3 JULY 2015 ON THE HARMONISED FREQUENCY BAND TO BE DESIGNATED FOR ANALOGUE AND DIGITAL PMR 446 (ECC/DEC/(15)05)

"The European Conference of Postal and Telecommunications Administrations,

considering

a) that there is an industry and user requirement for harmonised usage conditions for analogue and digital PMR 446 radio equipment throughout Europe;

b) that it would be desirable for administrations to have common regulations at their disposal in order to control free carriage and use of PMR 446 radio equipment throughout Europe;

c) that the European Telecommunications Standards Institute (ETSI) has developed the Harmonised European Standards ETSI EN 300 113-2, EN 301 166-2 and EN 300 296-2 which can be used for state-of-the-art PMR 446 radio equipment;

d) that analogue and digital PMR 446 radio equipment is hand portable (no base station or repeater use) and uses integral antennas only in order to maximise sharing and minimise interference;

e) that it is not recommended that applications requiring encrypted speech should be used with PMR 446 radio equipment;

f) that PMR 446 radio equipment complying to ETSI EN 300 113-2, EN 301 166-2 and EN 300 296-2 also fulfil the recommended limits identified in ERC/REC 74-01 on unwanted emissions in the spurious domain;

g) that in the EU/ EFTA countries the radio equipment that is under the scope of this Decision shall comply with the R&TTE Directive. Conformity with the essential requirements of the R&TTE Directive may be demonstrated by compliance with the applicable Harmonised European Standard(s) or by using the other conformity assessment procedures set out in the R&TTE Directive;

h) that those administrations that are bound by EU Directive 1999/5/EC, the R&TTE Directive, as well as those countries that have implemented this Directive voluntarily, need to take account of the provisions of that Directive;

i) that when implementing this Decision, CEPT administrations shall consider the need for transitional arrangements;

j) that ETSI has developed ETSI Technical Specification TS 103 236 for more robust receivers using Continuous Tone Controlled Signalling System (CTCSS) and Digitally Coded Squelch Signalling System (DCSS), TS 102 490 for digital PMR 446 equipment with 6.25 kHz channel spacing and TS 102 361-1 for digital PMR 446 equipment with 12.5 kHz channel spacing;

k) that new frequency usage opportunities for analogue and digital PMR 446 equipment should be introduced with due awareness of the probable continued use of the bands by existing analogue and digital PMR 446 equipment. It is therefore important for administrations to communicate the intended changes as soon as possible to industry, retailers and users throughout Europe;

DECIDES

1. that the purpose of this ECC Decision is to harmonise the usage conditions for analogue and digital PMR 446 radio equipment throughout Europe;

2. that CEPT administrations shall designate the band 446.0-446.2 MHz for the use of analogue PMR 446 with a channel plan based on 12.5 kHz spacing where the lowest carrier frequency is 446.00625 MHz;

3. that CEPT administrations shall designate the band 446.1-446.2 MHz for the use of digital PMR 446 with a channel plan based on 6.25 kHz and 12.5 kHz spacing where the lowest carrier frequencies are 446.103125 MHz and 446.10625 MHz respectively;

4. that CEPT administrations shall designate the band 446.0-446.2 MHz for the use of digital PMR 446 with a channel plan based on 6.25 kHz and 12.5 kHz spacing where the lowest carrier frequencies are 446.003125 MHz and 446.00625 MHz respectively as of 1 January 2018;

5. that analogue PMR446 equipment operating in the frequency range 446.1-446.2 MHz should use more robust receivers, as specified in ETSI TS 103 236 or equivalent technical specifications;

6. that analogue PMR446 equipment operating in the frequency range 446.0-446.1 MHz should use more robust receivers, as specified in ETSI TS 103 236 or equivalent technical specifications when placed on the market as of 1 January 2017;

7. that subject to decides 8, 9 and 10 below, CEPT administrations shall permit free carriage and use of all analogue and digital PMR 446 radio equipment;

8. that CEPT administrations shall exempt analogue and digital PMR 446 radio equipment covered by the present Decision from individual licensing;

9. that all PMR 446 equipment is hand portable and shall use only integral antenna and an effective radiated power not exceeding 500 mW, while any base station, repeater or fixed infrastructure use is excluded;

10. that the following technical characteristics shall be applied for PMR 446 applications in order to reduce the risk of harmful interference:

    a) all PMR 446 radio equipment shall have reception capability;

    b) PMR 446 radio equipment having Push-To-Talk (PTT) functionality capable of being latched 'on' shall apply a 180 seconds maximum transmitter time-out;

    c) PMR 446 radio equipment having no Push-To-Talk (PTT) functionality shall apply a 180 seconds maximum transmitter time-out and VOX (Voice activation exchange) control;

11. that compliance of PMR 446 radio equipment with all technical requirements shall be demonstrated with the applicable Harmonised European Standards ETSI EN 300 113-2, EN 301 166-2, or EN 300 296-2;

12. that the definitions in the Annex 1 apply for the purpose of this Decision;

13. that this Decision replaces ERC/DEC/(98)25 and ECC/DEC/(05)12 which are withdrawn;

14. that this Decision enters into force by 3 July 2015;

15. that the preferred date for implementation of this ECC Decision shall be 3 January 2016;

16. that CEPT administrations shall communicate the national measures implementing this Decision to the ECC Chairman and the ECO when the Decision is nationally implemented."

Note:

Please check the Office documentation database http://www.ecodocdb.dk for the up to date position on the implementation of this and other ECC Decisions.

ANNEX 1: DEFINITIONS

Integral antenna: antenna designed as a fixed part of the equipment (without the use of an external connector) which cannot be disconnected from the equipment by a user with the intent to connect another antenna.

Hand portable station: equipment fitted with an integral antenna, normally used on a stand-alone basis, to be carried on a person or held in the hand.

ANNEX 2: LIST OF REFERENCES

[1] ETSI Harmonised European Standards EN 300 296-2: Radio equipment using integral antennas intended primarily for analogue speech

[2] ETSI Harmonised European Standards EN 300 113-2: Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector

[3] ETSI Harmonised European Standards EN 301 166-2: Radio equipment for analogue and/or digital communication (speech and/or data) and operating on narrow band channels and having an antenna connector

[4] ERC Decision (98)25 on the harmonised frequency band to be designated for PMR 446

[5] ECC Decision (05)12 on harmonised frequencies, technical characteristics, exemption from individual licensing and free carriage and use of digital PMR 446 applications operating in the frequency band 446.1-446.2 MHz

[6] ERC Recommendation 01-07 on the harmonised regime for exemption from individual licensing for the use of radio spectrum

[7] ERC Recommendation 74-01 Unwanted Emissions in the Spurious Domain

[8] EU Directive 1999/5/EC of the European Parliament and of the Council on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (RTTE Directive)

[9] ETSI Technical Specification TS 103 236: Continuous Tone Controlled Signalling System (CTCSS) and Digitally Coded Squelch Signalling (DCSS) system

[10] ETSI Technical Specification TS 102 361-1: Digital Mobile Radio (DMR) Systems;