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[1]

approved 3 July 2015

latest amended 30 October 2026

[1] Comparable technical specifications to those given in this ECC Decision are given in the amended EC Decision 2006/771/EC for SRD. EU Member States and, if so approved by the EEA Joint Committee, Iceland, Liechtenstein and Norway are obliged to implement the EC Decision.

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 ETSI Harmonised European Standard EN 303 405 [1].

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 Decision is improved spectral efficiency so that all the permitted digital equipment should be 6.25 kHz or 12.5 kHz per voice channel.

This Decision repeals the earlier ERC Decision (98)25 and ECC Decision (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 Decision (98)25 of 23 November 1998 [2] 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 Decision (05)12 of 28 October 2005 [3].

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

The 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 developed the ETSI EN 303 405 [1] for PMR 446 equipment for radio conformance purposes.

CEPT considered the possibility of increasing the e.r.p. limit from 500 mW to 1 W while retaining the integral antenna requirement. ECC Report 369 [10] has concluded that there is a trade-off between coverage gains and capacity reduction shown in the studies, current usage of the band indicates that the 446.0-446.2 MHz band has sufficient headroom to support higher power PMR 446 operations and that there is no need for advanced spectrum management techniques.

The analogue PMR 446 devices, operating in the frequency range 446.0-446.1 MHz, placed on the market before 1 January 2017 are “grandfathered”, i.e. they are continuously exempted from the more robust receiver requirements introduced from 1 January 2017 to the end of lifetime of the equipment.

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 Radio Equipment Directive 2014/53/EU [6]. 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 Recommendation 01-07 [4], 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 Recommendation 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 DECISION (15)05), AMENDED ON 02 MARCH 2018 AND AMENDED 30 OCTOBER 2026

"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 ETSI EN 303 405 [1] which can be used for state-of-the-art PMR 446 radio equipment;

d) that PMR 446 radio equipment complying to ETSI EN 303 405 also fulfil the recommended limits identified in ERC Recommendation 74-01 [5] on unwanted emissions in the spurious domain;

e) that those administrations that are bound by EU Directive 2014/53/EU [6], the RE Directive, as well as those countries that have implemented this Directive voluntarily, need to take account of the provisions of that Directive;

f) that ETSI has developed ETSI Technical Specification TS 103 236 [7] for more robust receivers using Continuous Tone Controlled Signalling System (CTCSS) and Digitally Coded Squelch Signalling System (DCSS), TS 102 490 [9] for digital PMR 446 equipment with 6.25 kHz channel spacing and TS 102 361-1 [8] for digital PMR 446 equipment with 12.5 kHz channel spacing;

g) that in the EU/EFTA countries the radio equipment that is under the scope of this Decision shall comply with the RE Directive. Conformity with the essential requirements of the RE 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 RE Directive;

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 446.0-446.2 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;

4. that analogue PMR 446 equipment operating in the frequency range 446.0-446.2 MHz should use more robust receivers, as specified in ETSI TS 103 236 [7] or equivalent technical specifications;

5. that analogue PMR 446 devices placed on the market before 1 January 2017, operating in the frequency range 446.0-446.1 MHz, are exempted from the receiver requirement set out in decides 4;

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

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

8. that all PMR 446 equipment is hand portable and shall use only integral antenna and an effective radiated power not exceeding 1 W, while any base station, repeater or fixed infrastructure use is excluded;

9. 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;

10. that compliance of PMR 446 radio equipment with all technical requirements referred to in this ECC Decision can be demonstrated using the applicable ETSI EN 303 405 [1];

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

12. that this Decision replaces ERC Decision (98)25 [2] and ECC Decision (05)12 [3] which are withdrawn;

13. that this Decision enters into force by 30 October 2026;

14. that the preferred date for implementation of this ECC Decision shall be 30 April 2027;

15. that CEPT administrations shall communicate the national measures implementing this Decision to the ECC Chair and the European Communications Office when the Decision is nationally implemented."

Note:

Please check the ECO Documentation Database https://docdb.cept.org/ 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, used on a stand-alone basis, to be carried on a person or manually operated.

ANNEX 2: LIST OF REFERENCES

[1] ETSI EN 303 405: “Analogue and Digital PMR446 Equipment”

[2] ERC Decision (98)25: “The harmonised frequency band to be designated for analogue PMR 446”, approved November 1998, withdrawn by ECC Decision (15)05 July 2015

[3] ECC Decision (05)12: “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”, approved October 2005, withdrawn by ECC Decision (15)05 July 2015

[4] ERC Recommendation 01-07: “the harmonised regime for exemption from individual licensing for the use of radio spectrum”, approved May 1995, latest revised June 2004

[5] ERC Recommendation 74-01: "Unwanted emissions in the spurious domain", approved 1998, updated October 2021

[6] Radio Equipment Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC

[7] ETSI TS 103 236: “Continuous Tone Controlled Signalling System (CTCSS) and Digitally Coded Squelch Signalling (DCSS) system”

[8] ETSI TS 102 361-1: “Digital Mobile Radio (DMR) Systems”

[9] ETSI TS 102 490: “Peer-to-Peer Digital Private Mobile Radio using FDMA with a channel spacing of 6,25 kHz with e.r.p. of up to 500 mW”

[10] ECC Report 369: Technical Feasibility and Implications of Increasing Power for Private Mobile Radio in the 446.0-446.2 MHz Frequency Band, approved January 2026