

COMMISSION IMPLEMENTING DECISION (EU) 2022/172**of 7 February 2022****amending Implementing Decision (EU) 2018/1538 on the harmonisation of radio spectrum for use by short-range devices within the 874-876 and 915-921 MHz frequency bands***(notified under document C(2022) 608)***(Text with EEA relevance)**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision) ⁽¹⁾, and in particular Article 4(3) thereof,

Whereas:

- (1) Short-range devices are typically mass-market or portable products or both which can easily be taken and used across borders. Differences in spectrum access conditions may prevent their free movement, increase their production costs and create risks of harmful interference with other radio applications and services due to unauthorised use. Commission Decision 2006/771/EC ⁽²⁾ harmonised the technical conditions for use of spectrum for a wide variety of short-range devices which, as a result, are subject to a very light regulatory regime and to no more than a general authorisation under national law.
- (2) Commission Implementing Decision (EU) 2018/1538 ⁽³⁾ harmonised the technical conditions for the use of the 874-876 and 915-921 MHz frequency bands by technically advanced radio frequency identification ('RFID') solutions as well as 'Internet of Things' applications based on networked short-range devices in data networks. In those frequency bands, the sharing environment is different compared to that applicable under Decision 2006/771/EC, therefore, a specific regulatory regime is required.
- (3) While the 873-874,4 MHz and 918-919,4 MHz bands are not harmonised for usage of the global system for mobile communications for -railway ('GSM -R') s by Union law or by a Decision of the European Communications Committee ('ECC'), these frequency bands may be used for this purpose on a national basis subject to a national decision in line with the Radio Regulations of the International Telecommunication Union. Therefore, where harmonised technical conditions would not be sufficient to protect the use of these bands for a national extension of GSM for Railways ('E-GSM-R'), concerned Member States are allowed to subject the use of short-range devices to additional requirements without impacting the harmonised technical conditions for access to spectrum for short-range devices within the bands. Such restrictions, where needed in a particular Member State, should notably ensure that coordination between spectrum users takes place in order to enable geographic sharing between E-GSM-R on the one hand and RFID devices and networked short-range devices on the other.
- (4) The harmonised use for railway mobile radio of the paired frequency bands 874,4-880,0 MHz and 919,4-925,0 MHz, which are adjacent to sub-bands 874-874,4 MHz and 917,4-919,4 MHz harmonised for short-range devices by this Decision, is subject to Commission Implementing Decision (EU) 2021/1730 ⁽⁴⁾. The coexistence between

⁽¹⁾ OJ L 108, 24.4.2002, p. 1.

⁽²⁾ Commission Decision 2006/771/EC of 9 November 2006 on harmonisation of the radio spectrum for use by short-range devices (OJ L 312, 11.11.2006, p. 66).

⁽³⁾ Commission Implementing Decision (EU) 2018/1538 of 11 October 2018 on the harmonisation of radio spectrum for use by short-range devices within the 874-876 and 915-921 MHz frequency bands (OJ L 257, 15.10.2018, p. 57).

⁽⁴⁾ Commission Implementing Decision (EU) 2021/1730 of 28 September 2021 on the harmonised use of the paired frequency bands 874,4-880,0 MHz and 919,4-925,0 MHz and of the unpaired frequency band 1 900-1 910 MHz for Railway Mobile Radio (OJ L 346, 30.9.2021, p. 1).

short-range devices in the 874-874,4 MHz and 917,4-919,4 MHz frequency bands and railway mobile radio in the adjacent frequency bands 874,4-880,0 MHz and 919,4-925,0 MHz was assessed in Report 74 of the European Conference of Postal and Telecommunications Administrations ('CEPT').

- (5) In accordance with Article 1(4) of Decision No 676/2002/EC, Member States retain the right to organise and use their radio spectrum for public order and public security purposes and defence, and remain free, in that context, to protect the existing and future use of the 874-876 and 915-921 MHz frequency bands and of adjacent bands for military and other public security and public order purposes while pursuing the aim of making available the minimum harmonised core bands for networked short-range devices in accordance with the technical conditions defined in this Decision and in compliance notably with the general principles of EU law.
- (6) In order to reflect technological and market developments in the area of short-range devices, a permanent mandate was issued in July 2006 to the CEPT⁷ pursuant to Article 4(2) of Decision No 676/2002/EC, to update the Annex to Decision 2006/771/EC. The work carried out on the basis of the permanent mandate (seventh update cycle) was also the basis for Implementing Decision (EU) 2018/1538 which provided additional spectrum for short-range devices within the 874-876 and 915-921 MHz frequency bands.
- (7) On 16 July 2019, the Commission issued its guidance letter for the eighth update cycle of Decision 2006/771/EC. In response to the permanent mandate and in accordance with that guidance, the CEPT submitted to the Commission its Report 77 on 5 March 2021 which contains several proposals for the amendment of Implementing Decision (EU) 2018/1538. Those include the amendment of definitions in relation to short-range devices, in order to avoid ambiguity and ensure consistency with Decision 2006/771/EC. They also propose re-assessment of some technical parameters for categories of short-range devices covered by Implementing Decision (EU) 2018/1538. CEPT Report 77 constitutes the technical basis for this Decision.
- (8) Short-range devices operating within the conditions set out in this Decision should also comply with Directive 2014/53/EU of the European Parliament and of the Council⁽⁸⁾.
- (9) Implementing Decision (EU) 2018/1538 should therefore be amended.
- (10) The measures provided for in this Decision are in accordance with the opinion of the Radio Spectrum Committee,

HAS ADOPTED THIS DECISION:

Article 1

- (1) Decision (EU) 2018/1538 is amended as follows:

Article 2 is replaced by the following:

'Article 2

For the purposes of this Decision, the following definitions shall apply:

- (1) "short-range device" means a radio device which provides either unidirectional or bidirectional communication and which receives and/or transmits over a short distance at low power;
- (2) "non-interference and non-protected basis" means that no harmful interference may be caused to any radio communication service and that no claim may be made for protection of these devices against interference originating from radio communication services;

⁽⁸⁾ 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 (OJ L 153, 22.5.2014, p. 62).

- (3) “category of short-range devices” means a group of short-range or networked short-range devices that use spectrum with similar technical spectrum access mechanisms or based on common usage scenarios;”
- (2) The Annex is replaced by the text in the Annex to this Decision

Article 2

This Decision is addressed to the Member States.

Done at Brussels, 7 February 2022.

For the Commission
Thierry BRETON
Member of the Commission

Frequency bands with corresponding harmonised technical conditions and implementation deadlines for short-range devices

The following table specifies different combinations of frequency band and category of short-range devices (as defined in Article 2(6)), and the harmonised technical conditions for spectrum access and implementation deadlines applicable thereto.

General technical conditions applicable to all bands and short-range devices that fall in the scope of this Decision:

- Member States must allow the usage of spectrum up to the **transmit power, field strength or power density** given in this table. In accordance with Article 3(3), they may impose less restrictive conditions, i.e. allow the use of spectrum with higher transmit power, field strength or power density, provided that this does not reduce or compromise the appropriate coexistence between short-range devices in bands harmonised by this Decision;
- Member States may only impose the **'additional parameters'** (channelling and/or channel access and occupation rules) identified in the table, and shall not add other parameters or spectrum access and mitigation requirements. Less restrictive conditions within the meaning of Article 3(3), mean that Member States may completely omit the 'additional parameters (channelling and/or channel access and occupation rules)' in a given cell or allow higher values, provided that the appropriate sharing environment in the harmonised band is not compromised.
- Member States may only impose the **'other usage restrictions'** identified in the table and shall not add additional usage restrictions unless the conditions mentioned in Article 3(2) apply. As less restrictive conditions may be introduced within the meaning of Article 3(3), Member States may omit one or all of these restrictions, provided that the appropriate sharing environment in the harmonised band is not compromised.

Terms used:

'Duty cycle' is defined as the ratio, expressed as a percentage, of $\Sigma(\text{Ton})/(\text{Tobs})$ where Ton is the 'on' time of a single transmitter device and Tobs is the observation period. Ton is measured in an observation frequency band (Fobs). Unless otherwise specified in this technical annex, Tobs is a continuous one hour period and Fobs is the applicable frequency band in this Annex. Less restrictive conditions within the meaning of Article 3(3), mean that Member States may allow a higher value for 'duty cycle'.

Band no	Frequency band	Category of short-range devices	Transmit power limit/field strength limit/power density limit	Additional parameters (channelling and/or channel access and occupation rules)	Other usage restrictions	Implementation deadline
1	874-874,4 MHz ^[8]	Non-specific short-range devices ^[1]	500 mW e.r.p. Adaptive Power Control (APC) required, alternatively other mitigation techniques which achieve at least an equivalent level of spectrum compatibility	Techniques to access spectrum and mitigate interference that provide an appropriate level of performance to comply with the essential requirements of Directive 2014/53/EU shall be used. If relevant techniques are described in harmonised standards or parts thereof the references of which have been published in the <i>Official Journal</i>	This set of usage conditions is only available for data networks All nomadic and mobile devices within the data network shall be controlled by a master network access point ^[4] , ^[5] , ^[6] , ^[7]	1 July 2022

				<p>of the European Union under Directive 2014/53/EU, performance at least equivalent to these techniques shall be ensured.</p> <p>Bandwidth: ≤ 200 kHz</p> <p>Duty cycle: ≤ 10 % for network access points ^[4]</p> <p>Duty cycle: 2,5 % otherwise</p>		
2	917,4-919,4 MHz ^[9]	Wideband data transmission devices ^[3]	25 mW e.r.p	<p>Techniques to access spectrum and mitigate interference that provide an appropriate level of performance to comply with the essential requirements of Directive 2014/53/EU shall be used. If relevant techniques are described in harmonised standards or parts thereof the references of which have been published in the <i>Official Journal of the European Union</i> under Directive 2014/53/EU, performance at least equivalent to these techniques shall be ensured.</p> <p>Bandwidth: > 600 kHz and ≤ 1 MHz</p> <p>Duty cycle: ≤ 10 % for network access points ^[4]</p> <p>Duty cycle: ≤ 2,8 % otherwise</p>	<p>This set of usage conditions is only available for wideband short-range devices in data networks</p> <p>All nomadic and mobile devices within the data network shall be controlled by a master network access point ^{[4], [5], [6]}</p>	1 July 2022

3	916,1-918,9 MHz ^[10]	Radio Identification devices ^[2] Frequency (RFID)	Interrogator transmissions at 4 W e.r.p. only permitted at the centre frequencies 916,3 MHz, 917,5 MHz, 918,7 MHz	Techniques to access spectrum and mitigate interference that provide an appropriate level of performance to comply with the essential requirements of Directive 2014/53/EU shall be used. If relevant techniques are described in harmonised standards or parts thereof the references of which have been published in the <i>Official Journal of the European Union</i> under Directive 2014/53/EU, performance at least equivalent to these techniques shall be ensured. Bandwidth: ≤ 400 kHz	^{[5], [6], [7]}	1 July 2022
4	917,3-918,9 MHz	Non-specific short-range devices ^[1]	500 mW e.r.p. Transmissions only permitted within the frequency ranges 917,3-917,7 MHz, 918,5-918,9 MHz Adaptive Power Control (APC) required, alternatively other mitigation techniques which achieve at least an equivalent level of spectrum compatibility	Techniques to access spectrum and mitigate interference that provide an appropriate level of performance to comply with the essential requirements of Directive 2014/53/EU shall be used. If relevant techniques are described in harmonised standards or parts thereof the references of which have been published in the <i>Official Journal of the European Union</i> under Directive 2014/53/EU, performance at least equivalent to these techniques shall be ensured.	This set of usage conditions is only available for data networks. All nomadic and mobile devices within the data network shall be controlled by a master network access point ^{[4], [5], [6], [7]} .	1 July 2022

				<p>Bandwidth: ≤ 200 kHz</p> <p>Duty cycle: ≤ 10 % for network access points ^[4]</p> <p>Duty cycle: ≤ 2,5 % otherwise</p>		
5	917,4-919,4 MHz ^[9]	Non-specific short-range devices ^[1]	25 mW e.r.p.	<p>Techniques to access spectrum and mitigate interference that provide an appropriate level of performance to comply with the essential requirements of Directive 2014/53/EU shall be used. If relevant techniques are described in harmonised standards or parts thereof the references of which have been published in the <i>Official Journal of the European Union</i> under Directive 2014/53/EU, performance at least equivalent to these techniques shall be ensured.</p> <p>Bandwidth: ≤ 600 kHz</p> <p>Duty cycle: ≤ 1 %,</p>	<p>This set of usage conditions is only available for short-range device in data networks. All nomadic and mobile devices within the data network shall be controlled by a master network access point ^[4], ^[5], ^[6]</p>	1 July 2022

^[1] The non-specific short-range device category covers all kinds of radio devices, regardless of the application or the purpose, which fulfil the technical conditions as specified for a given frequency band. Typical uses include telemetry, telecommand, alarms, data transmissions in general and other applications.

^[2] The radio frequency identification (RFID) device category covers tag/interrogator based radio communications systems, consisting of radio devices (tags) attached to animate or inanimate items and of transmitter/receiver units (interrogators) which activate the tags and receive data back. Typical uses include the tracking and identification of items, such as for electronic article surveillance (EAS), and collecting and transmitting data relating to the items to which tags are attached, which may be either battery-less, battery assisted or battery powered. The responses from a tag are validated by its interrogator and passed to its host system.

^[3] The wideband data transmission device category covers radio devices that use wideband modulation techniques to access the spectrum. Typical uses include wireless access systems such as radio local area networks (WAS/RLANs) or wideband short-range devices in data networks.

^[4] A network access point in a data network is a fixed terrestrial short range device that acts as a connection point for the other short range devices in the data network to service platforms located outside of that data network. The term data network refers to several short range devices, including the network access point, as network components and to the wireless connections between them.'

^[5] According to Article 3(1) the frequency bands shall be designated and made available on a non-exclusive and shared basis. The harmonised technical conditions shall make it possible for most short-range devices in most Member States to be operated subject to a general authorisation regime under national law. This is without prejudice to Articles 46 and 51 of Directive (EU) 2018/1972 and to Articles 3(2) and 7 of Directive 2014/53/EU. Member States may limit usage of this entry such that installation and operation are performed only by professional users and may consider individual authorisation, e.g. to administer geographical sharing and/or the application of mitigation techniques to ensure protection of radio services.

^[6] In Member States where parts or all of this frequency range are used for public order and public security purposes and defence and coordination is not possible, Member States may decide not to implement this entry partially or entirely, in accordance with Article 1(4) of Decision 676/2002/EC and Article 3(2) of this Decision.

^[7] National rules, such as local coordination, may also be needed in order to avoid interference to radio services operating in the adjacent bands, for example due to intermodulation or blocking.

^[8] This frequency range 874-874,4 MHz is the harmonised minimum core band.

^[9] This frequency range 917,4-919,4 MHz is the harmonised minimum core band.

^[10] RFID tags respond at a very low power level (-10 dBm e.r.p.) in a frequency range around the RFID interrogator channels and must comply with the essential requirements of Directive 2014/53/EU.
