Commission Implementing Decision (EU) 2019/785 of 14 May 2019 on the harmonisation of radio spectrum for equipment using ultra-wideband technology in the Union and repealing Decision 2007/131/EC (notified under document C(2019) 3461) (Text with EEA relevance)

COMMISSION IMPLEMENTING DECISION (EU) 2019/785

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on the harmonisation of radio spectrum for equipment using ultra-wideband technology in the Union and repealing Decision 2007/131/EC

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(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) Commission Decision 2007/131/EC[(2)] harmonises the technical conditions for spectrum use by radio equipment based on ultra-wideband ('UWB') technology in the Union. It ensures that radio spectrum is available across the Union under harmonised conditions, eliminates barriers to the take-up of UWB technology and aims at creating an effective single market for UWB systems with significant economies of scale and benefits to the consumer.

(2) Although ultra-wideband signals are typically of extremely low power, the possibility of harmful interference with existing radiocommunication services exists and needs to be managed. Therefore, this Decision on the harmonisation of radio spectrum for UWB equipment should avoid harmful interference (including where this might arise from access to the radio spectrum by radio astronomy, earth exploration satellite and space research systems) and balance the incumbent services' interests against the overall policy objective of providing favourable conditions for the introduction of innovative technologies for the benefit of society.

(3) On 16 March 2017, the Commission issued a permanent mandate, pursuant to Decision No 676/2002/EC, to the European Conference of Postal and Telecommunications Administrations ('CEPT') to identify the technical conditions for the harmonised introduction of radio applications based on UWB technology in the Union in order to provide updated technical conditions for such applications.

(4) In response to that permanent mandate, CEPT adopted a report[(3)] where it proposed four measures. Firstly, the technical conditions should describe material sensing devices

in a more neutral way in order to allow for innovative solutions. Secondly, it should be possible to use the conditions for generic UWB usage also for material sensing applications. Thirdly, there should be a – 65 dBm/MHz limit for all material sensing devices including building material analysis (BMA) in the 8,5-10,6 GHz band. Fourthly, the possibility of a trigger-before-transmit mitigation for vehicular access control systems based on UWB technology should be introduced in the 3,8-4,2 GHz and 6-8,5 GHz frequency bands.

(5) This Decision should support the overall harmonisation of the UWB regulatory framework in order to improve consistency of limits and mitigation techniques between the different UWB regulations and allow for innovative solutions in the field of UWB technology.

(6) This Decision provides for regulatory limits and identifies mitigation techniques to ensure an efficient usage of spectrum while ensuring coexistence with other spectrum users. Technological evolution may provide other solutions that ensure at least an equivalent level of spectrum protection. For this reason, the use of alternative mitigation techniques, such as solutions found in future possible harmonised standards produced by the European Standardisation Organisations, should be allowed provided they ensure at least an equivalent level of performance and spectrum protection and verifiably respect the established technical requirements of this regulatory framework.

(7) Decision 2007/131/EC has been amended several times. In the interest of legal clarity Decision 2007/131/EC should be repealed.

(8) The measures provided for in this Decision are in accordance with the opinion of the Radio Spectrum Committee,

HAS ADOPTED THIS DECISION:

Article 1

The purpose of this Decision is to harmonise the technical conditions for the availability and efficient use of radio spectrum by equipment using ultra-wideband technology in the Union.

Article 2

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

(a) ‘equipment using ultra-wideband technology’ means equipment incorporating, as an integral part or as an accessory, technology for short-range radiocommunication, involving the intentional generation and transmission of radio-frequency energy that spreads over a frequency range wider than 50 MHz, which may overlap several frequency bands allocated to radiocommunication services;

(b) ‘non-interference and non-protected basis’ means that no harmful interference may be caused to any radiocommunication service and that no claim may be made for protection of these devices against interference originating from radiocommunication services;

(c) 'indoors' means inside buildings or places in which the shielding will typically provide the necessary attenuation to protect radiocommunication services against harmful interference;

(d) 'motor vehicle' has the same meaning as set out in Article 3(11) of Directive 2007/46/EC of the European Parliament and of the Council[(4)];

(e) 'railway vehicle' has the same meaning as set out in Article 3(1)(4) of Regulation (EU) 2018/643 of the European Parliament and of the Council[(5)];

(f) 'e.i.r.p.' means equivalent isotropically radiated power, which is the product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna (absolute or isotropic gain);

(g) 'maximum mean power spectral density' means the average power per unit bandwidth (centred on that frequency) radiated in the direction of the maximum level under the specified conditions of measurement and which is specified as e.i.r.p. of the radio device under test at a particular frequency;

(h) 'peak power' means the power contained within a 50 MHz bandwidth at the frequency at which the highest mean radiated power occurs, radiated in the direction of the maximum level under the specified conditions of measurement and which is specified as e.i.r.p.;

(i) 'total power spectral density' means the average of the mean power spectral density values measured over a sphere around the measurement scenario with a resolution of at least 15 degrees;

(j) 'onboard aircraft' means the use of radio links for communications purposes inside an aircraft;

(k) 'LT1' means systems intended for general location tracking of people and objects that can be put into service on an unlicensed basis.

Article 3

Within six months after this Decision takes effect, Member States shall designate and make available the radio spectrum, on a non-interference and non-protected basis, for equipment using ultra-wideband technology provided that such equipment meets the conditions set out in the Annex and it is used indoors or, if it is used outdoors, it is not attached to a fixed installation, a fixed infrastructure or a fixed outdoor antenna. Equipment using ultra-wideband technology which meets the conditions set out in the Annex shall also be allowed in motor and railway vehicles.

Article 4

Member States shall monitor the use of the bands identified in the Annex by equipment using ultra-wideband technology, in particular to ensure that all the conditions laid down in Article 3 of this Decision continue to be relevant, and report their findings to the Commission.

Article 5

Decision 2007/131/EC is repealed.

Article 6

This Decision is addressed to Member States.

Changes to legislation: *There are currently no known outstanding effects for the Commission Implementing Decision (EU) 2019/785. (See end of Document for details)*

Done at Brussels, 14 May 2019.

For the Commission

Mariya GABRIEL

Member of the Commission

***Changes to legislation:** There are currently no known outstanding effects for the Commission Implementing Decision (EU) 2019/785. (See end of Document for details)*

ANNEX

1. GENERIC ULTRA-WIDEBAND (UWB) USAGE

Technical requirements		
Frequency range	**Maximum mean power spectral density (e.i.r.p.)**	**Maximum peak power (e.i.r.p.)(defined in 50 MHz)**
f ≤ 1,6 GHz	– 90 dBm/MHz	– 50 dBm
1,6 < f ≤ 2,7 GHz	– 85 dBm/MHz	– 45 dBm
2,7 < f ≤ 3,1 GHz	– 70 dBm/MHz	– 36 dBm
3,1 < f ≤ 3,4 GHz	– 70 dBm/MHz or – 41,3 dBm/MHz using LDC[a] or DAA[b]	– 36 dBm or 0 dBm
3,4 < f ≤ 3,8 GHz	– 80 dBm/MHz or – 41,3 dBm/MHz using LDC[a] or DAA[b]	– 40 dBm or 0 dBm
3,8 < f ≤ 4,8 GHz	– 70 dBm/MHz or – 41,3 dBm/MHz using LDC[a] or DAA[b]	– 30 dBm or 0 dBm
4,8 < f ≤ 6 GHz	– 70 dBm/MHz	– 30 dBm
6 < f ≤ 8,5 GHz	– 41,3 dBm/MHz	0 dBm
8,5 < f ≤ 9 GHz	– 65 dBm/MHz or – 41,3 dBm/MHz using DAA[b]	– 25 dBm or 0 dBm
9 < f ≤ 10,6 GHz	– 65 dBm/MHz	– 25 dBm
f > 10,6 GHz	– 85 dBm/MHz	– 45 dBm

a Within the 3,1 GHz to 4,8 GHz band. The Low Duty Cycle ('LDC') mitigation technique and its limits are defined in clauses 4.5.3.1, 4.5.3.2 and 4.5.3.3 of ETSI Standard EN 302 065-1 V2.1.1. Alternative mitigation techniques may be used if they ensure at least an equivalent performance and level of spectrum protection in order to comply with the corresponding essential requirements of 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) and respect the technical requirements of this Decision.

b Within the 3,1 GHz to 4,8 GHz and 8,5 GHz to 9 GHz bands. The Detect and Avoid ('DAA') mitigation technique and its limits are defined in clauses 4.5.1.1, 4.5.1.2 and 4.5.1.3 of ETSI Standard EN 302 065-1 V2.1.1. Alternative mitigation techniques may be used if they ensure at least an equivalent performance and level of spectrum protection in order to comply with the corresponding essential requirements of Directive 2014/53/EU and respect the technical requirements of this Decision.

2. LOCATION TRACKING SYSTEMS Type 1 (LT1)