



Radiocommunication Bureau (BR)

Administrative Circular
CACE/1038

27 September 2022

**To Administrations of Member States of the ITU, Radiocommunication Sector Members,
ITU-R Associates participating in the work of the Radiocommunication Study Group 1
and ITU Academia**

Subject: **Radiocommunication Study Group 1 (Spectrum Management)**
 – **Approval of 1 new and 1 revised ITU-R Questions**

By Administrative Circular [CACE/1033](#) dated 20 July 2022, 1 draft new and 1 draft revised ITU-R Questions were submitted for approval by correspondence in accordance with Resolution ITU-R 1-8 (§ A2.5.2.3).

The conditions governing this procedure were met on 20 September 2022.

The texts of the approved Questions are attached for your reference in the Annexes 1 to 2 and will be published by the ITU.

Mario Maniewicz
Director

Annexes: 2

Annex 1

QUESTION ITU-R 243/1

Impact of unintentional¹ radio frequency energy generated by electrical or electronic apparatus to the radiocommunication services

(2022)

The ITU Radiocommunication Assembly,

considering

- a)* that electrical and electronic technology development is an on-going process that opens new ways for creation, design and composition of devices and their systems;
- b)* that electrical or electronic apparatus and their systems might be designed or installed in such a way that radiation could not be minimized;
- c)* that such technologies tend to increase, spread and become pervasive and ubiquitous, especially on residential areas where the use of the radiocommunication services is intensive and also in development;
- d)* that radiation from such apparatus and systems, including those not devoted to perform radiocommunication, may cause interference to radiocommunication services, particularly at LF, MF, HF, VHF and UHF;
- e)* that effects due to apparatus and systems involving Wireless Power Transmission, Power Line Telecommunications and Power Grid Management Systems are being dealt with under specific Study Group 1 Questions;
- f)* that the incidence of radio noise sets a practical limit to the performance and the utility of the terrestrial, space and radio astronomy services;

¹ Radiation from a device that generates radio frequency energy during the course of its operation although the device is not intentionally designed to generate or emit radio frequency energy; or from a device that intentionally generates radio frequency energy for use within the device, or that sends radio frequency signals by conduction to associated equipment via connecting wiring, but which is not intended to emit RF energy by radiation or induction.

g) that, according to Nos. **15.12*** and **15.13**** of the Radio Regulations (RR), administrations shall take all practicable and necessary steps to ensure these apparatuses or installations do not cause harmful interference to radiocommunication services;

h) that radiation from broadcasting satellite TV (BS-TV) receiving systems at their intermediate frequency have been identified as the source of harmful interference to sensors operating in the Earth exploration-satellite service (passive) in the frequency band 1 400-1 427 MHz and to systems operating in the mobile service in the frequency range 850-2 100 MHz;

i) that EMC publications from IEC/CISPR are stated to cover all types of products, systems and installations through basic, generic and product standards, and that work is done in collaboration with ITU under Resolution ITU-R 9-6,

decides that the following Questions, for the issues not covered by other Study Group 1 Questions, should be studied

1 How the development and proliferation of electrical or electronic apparatus and their systems are affecting the man-made noise levels in the radio spectrum?

2 How will the development and proliferation of electrical or electronic apparatus and their systems affect the way in which their electromagnetic disturbances and the resulting interference are measured, taking into account the real operating environment with their typical proximity to radiocommunication equipment and systems?

3 What technical characteristics and limits should apply to electrical or electronic apparatus and their systems so as to avoid harmful interference to radiocommunication services and not increase the noise floor?

4 What regulatory provisions are needed to provide effective protection for radiocommunication services against harmful interference from such apparatus and their systems to keep the noise floor as low as possible?

5 What regulatory provisions are needed to provide effective protection for radiocommunication services against harmful interference caused by radiation arising from multiple items of electronic equipment connected together by cabling that conducts RF energy between equipment?

* RR No. **15.12** (Edition 2020): Administrations shall take all practicable and necessary steps to ensure that the operation of electrical apparatus or installations of any kind, including power and telecommunication distribution networks, but excluding equipment used for industrial, scientific and medical applications, does not cause harmful interference to a radiocommunication service and, in particular, to a radionavigation or any other safety service operating in accordance with the provisions of these Regulations.

** RR No. **15.13** (Edition 2020): Administrations shall take all practicable and necessary steps to ensure that radiation from equipment used for industrial, scientific and medical applications is minimal and that, outside the bands designated for use by this equipment, radiation from such equipment is at a level that does not cause harmful interference to a radiocommunication service and, in particular, to a radionavigation or any other safety service operating in accordance with the provisions of these Regulations.

further decides

- 1 that the results of the above studies should be included in one or more Recommendation(s) and/or Report(s);
- 2 that the above studies should be completed by 2027;
- 3 that cooperation with the International Special Committee on Radio Interference (CISPR) and ITU-T should be sought.

Category: (S3)

Annex 2

QUESTION ITU-R 210-4/1*

Wireless power transmission

(1997-2006-2007-2012-2022)

The ITU Radiocommunication Assembly,

considering

- a) that wireless power transmission (WPT) is defined as the transmission of power from a power source to an electrical load wirelessly using an electromagnetic field;
- b) that technology is under development to transfer power efficiently from one location to another using wireless methods;
- c) that such WPT technologies may be useful in several applications including solar power, airborne platforms, lunar stations, electric vehicles, Internet of Things (IoT) devices and wireless charging of mobile / portable devices;
- d) that WPT is not a defined radio service in the Radio Regulations (RR);
- e) that no frequency bands have been specifically associated with WPT technology;
- f) that WPT is considered to be either one of the electrical apparatus that are referred to in RR No. **15.12** or industrial, scientific and medical (ISM) equipment referred to in RR No. **15.13****;

* This Question should be brought to the attention of the International Maritime Organization (IMO), the International Civil Aviation Organization (ICAO), the International Electrotechnical Commission (IEC), the International Special Committee on Radio Interference (CISPR), the Scientific Committee On Frequency Allocations for Radio Astronomy and Space Science (IUCAF) and Radiocommunication Study Group 3.

** RR No. **15.12** (Edition 2020): Administrations shall take all practicable and necessary steps to ensure that the operation of electrical apparatus or installations of any kind, including power and telecommunication distribution networks, but excluding equipment used for industrial, scientific and medical applications, does not cause harmful interference to a radiocommunication service and, in particular, to a radionavigation or any other safety service operating in accordance with the provisions of these Regulations.

RR No. **15.13** (Edition 2020): Administrations shall take all practicable and necessary steps to ensure that radiation from equipment used for industrial, scientific and medical applications is minimal and that, outside the bands designated for use by this equipment, radiation from such equipment is at a level that does not cause harmful interference to a radiocommunication service and, in particular, to a radionavigation or any other safety service operating in accordance with the provisions of these Regulations.

- g) that WPT technologies utilize various mechanisms, such as transmission via radio frequency beams, inductive, resonant and capacitive coupling;
- h) that technical characteristics have been developed for various WPT applications and technologies;
- i) that some WPT applications using the characteristics referred to in *considering h)* have already been deployed;
- j) that issues of non-ionizing radiation exposure related to systems employing WPT technologies are dealt with by such organizations as the World Health Organization (WHO) and the International Radiation Protection Association (IRPA)/International Commission on Non-ionizing Radiation Protection (ICNIRP),

noting

- 1 that in response to a previous version of this Question there are a number of existing ITU-R Recommendations and Reports¹ which cover various aspects of wireless power transmission systems;
- 2 the WRC-19 decision on WPT-EV (see [WRC-19 Document 237](#)),

decides that the following Questions should be studied and Reports or Recommendations developed as appropriate, including taking into account the Reports and Recommendations in *noting 1*

- 1 What kind of applications and electrical apparatus are WPT considered to be? What radio frequency ranges are used for each category of WPT application?
- 2 What are the technical and operational requirements to ensure that radiocommunication services are protected from harmful interference caused by WPT operations ?

further decides taking into account the existing Reports and Recommendations as listed in *noting 1*

- 1 that the newly developed WPT applications and technical and operational characteristics of WPT technologies should be included in existing or new ITU-R Reports and /or Recommendations;
- 2 that the results of the additional studies should be included in existing or new ITU-R Reports and /or Recommendations;
- 3 that the WPT technical and operational aspects related to the protection of radiocommunication services should be included in ITU-R Reports and /or Recommendations;

¹ Report ITU-R SM.2303, Report ITU-R SM.2449, Report ITU-R SM.2451, Report ITU-R SM.2392, Recommendation ITU-R SM.2110, and Recommendation ITU-R SM.2129.

4 that the suitable frequency ranges for harmonized WPT operations should be included in ITU-R Recommendations;

5 that the above studies should be completed by 2027.

Category: S3
