

## **RO-IR SRD-09**

### **TECHNICAL REGULATION**

**for the radio interface**

**concerning radio-frequency identification devices (RFID)**

**(previous coding RO-IR 11)**

## 1. Basic Considerations

Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonization of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC was implemented in national legislation by Government Decision No 740/2016 on making available on the market of radio equipment, with subsequent amendments and completions.

This technical regulation contains the requirements for license-exempt use of radio spectrum by radio-frequency identification devices in the specified frequency bands and considers compliance, especially, with the provisions of Article 3 Paragraph 2 and Articles 6-8 of Directive 2014/53/EU.

Nothing in this technical regulation shall preclude the obligation for radio equipment placed on the market or made available on the market in Romania to comply with Directive 2014/53/EU.

The obligations arising from Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services are met in this regulation (OJ L 241, 17.9.2015, p. 1-15).

All the Romanian technical regulations for the radio interfaces notified under Directive (EU) 2015/1535 shall be published and made available on National Authority for Management and Regulation in Communications (ANCOM) website at: [https://www.ancom.ro/en/romanian-regulation\\_2719](https://www.ancom.ro/en/romanian-regulation_2719).

## 2. Radio Interface Specifications

### Radio-Frequency Identification Devices (RFID)

Frequency band	Annex
400 – 600 kHz	RO-IR SRD-09-01
13 553 – 13 567 kHz	RO-IR SRD-09-02
2 446 – 2 454 MHz	RO-IR SRD-09-03a; RO-IR SRD-09-03b
865 – 868 MHz	RO-IR SRD-09-04
916.1 – 918.9 MHz	RO-IR SRD-09-05

For the purpose of this technical regulation, a *proximity radio device (short-range device - SRD)* means a radio device which provides either unidirectional or bidirectional communication and which receives and/or transmits signals over a short distance and at a low power. Radio-frequency identification devices (RFID) belong to the category of proximity radio devices (short-range devices).

The *radio-frequency identification devices (RFID)* category comprises tag/interrogator-based radio communications systems, consisting of: (i) radio devices (tags) attached to animate or inanimate elements and (ii) transmitter/receiver units (interrogators) which activate the tags and receive data in response. Typical uses include the tracking and identification objects, such as, for example, electronic article surveillance (EAS), as well as collecting and transmitting data relating to the objects to which tags are attached; the latter may not have battery, be assisted by batteries or operate with batteries. The responses received from a tag are validated by its interrogator and forwarded to its host system.

For the purpose of this technical regulation, *non-interference and non-protected basis* means that no harmful interference may be caused to any radio communications services and that no claim may

be made for protection of these devices against harmful interferences originating from radio communications services.

The use of radio spectrum by proximity radio devices (short-range devices) is allowed on a non-interference and non-protected basis provided that such devices meet the conditions set out in the Annexes below.

### 3. Document History:

Edition	Changes
Edition 1/2014	Notification number according to Directive 98/34/EC: 2014/606/RO.
Edition 2/2018 (06.08.2018)	<p>Update according to Commission Implementing Decision (EU) 2017/1483 amending Decision 2006/771/EC on harmonizing the radio spectrum for the use of short-range devices and repealing Decision 2006/804/EC:</p> <ul style="list-style-type: none"> <li>• RO-IR 11-01, RO-IR 11-02, RO-IR 11-03a were updated;</li> <li>• The new specification RO-IR 11-07 which replaces RO-IR 11-04, RO-IR 11-05 and RO-IR 11-06 was implemented.</li> </ul> <p>Update of the legal framework according to Point 1 – „Basic considerations” and reference documents (line 13);</p> <p>Formal changes according to TCAM-RSC pattern of November 2017.</p>
Edition 3/2020 (23.12.2020)	<p>Update according to Commission Implementing Decision (EU) 2019/1345 amending Decision 2006/771/EC in order to update the harmonised technical conditions for the use of radio spectrum for short-range devices:</p> <p>Update of the legal framework according to Point 1 – „Basic considerations”, as well as the updating of the reference documents;</p> <p>Update according to 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:</p> <ul style="list-style-type: none"> <li>• The frequency band has been implemented: 916.1-918.9 MHz (RO-IR 11-05);</li> </ul> <p>Renumber of annexes;</p> <p>Update according to the list of Class 1 radio equipment subclasses (version of January 2020) published according to Article 1 Paragraph (3) of Commission Decision 2000/299/EC (<a href="https://ec.europa.eu/docsroom/documents/40361">https://ec.europa.eu/docsroom/documents/40361</a>).</p>
Edition 4/2022 (11.10.2022)	<p>Update according to Commission Implementing Decision (EU) 2022/172 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.</p> <p>Update according to Commission Implementing Decision (EU) 2022/180 amending Decision 2006/771/EC as regards the update of harmonised technical conditions in the area of radio spectrum use for short-range devices:</p> <ul style="list-style-type: none"> <li>• Updating of reference documents (line 13) and definitions Point 2.</li> </ul>

ROMANIA	Radio Interface Specification	SRD / RFID	RO-IR SRD-09-01	Edition 4/2022
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	No	Parameter	Description	Comments
Normative part	1	Radiocommunication Service	Mobile	
	2	Application	Proximity radio devices (short-range devices) / Radio-frequency identification devices (RFID)	
	3	Frequency band	400 – 600 kHz	<i>Harmonised radio spectrum for use by short-range devices (Commission Implementing Decision (EU) 2022/180 amending Decision 2006/771/EC as regards the update of harmonised technical conditions in the area of radio spectrum use for short-range devices)</i>
	4	Channelling (channel distribution)	-	
	5	Modulation/Occupied bandwidth	-	
	6	Direction/Separation	-	
	7	Transmit power / Power density	– 8 dBμA/m at 10 meters	
	8	Channel occupation and access rules	-	
	9	Authorisation regime	Licence exemption	
	10	Additional essential requirements (According to Article 3 Paragraph 3 of 2014/53/EU Directive)	-	
	11	Assumptions on spectrum planning	-	
Informative part	12	Planned changes	-	
	13	Reference	EN 300 330; Commission Implementing Decision (EU) 2022/180 amending Decision 2006/771/EC as regards the update of harmonised technical conditions in the area of radio spectrum use for short-range devices; ERC/REC 70-03	
	14	Notification number	-	
	15	Remarks	-	

F1- RTIR Edition:1; Revision:1

ROMANIA	Radio Interface Specification	SRD / RFID	RO-IR SRD-09-02	Edition 4/2022
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	No	Parameter	Description	Comments
Normative part	1	Radiocommunication Service	Mobile	
	2	Application	Proximity radio devices (short-range devices) / Radio-frequency identification devices (RFID)	
	3	Frequency band	13 553 – 13 567 kHz	<i>Harmonised radio spectrum for use by short-range devices (Commission Implementing Decision (EU) 2022/180 amending Decision 2006/771/EC as regards the update of harmonised technical conditions in the area of radio spectrum use for short-range devices)</i>
	4	Channelling (channel distribution)	-	
	5	Modulation/Occupied bandwidth	-	
	6	Direction/Separation	-	
	7	Transmit power / Power density	60 dBμA/m at 10 meters	
	8	Channel occupation and access rules	Requirements for transmission mask and antenna requirements for all combined frequency bands segments are applicable.	Antenna requirements that provide an appropriate performance level to comply with the essential requirements provisioned in Directive 2014/53/EU shall apply. If the relevant restrictions are described in the harmonized standards or parts thereof, the references of which have been published in the Official Journal of the European Union under Directive 2014/53/EU, a performance at least equivalent to these restrictions shall be ensured. A transmission mask that provides an appropriate performance level to comply with the essential requirements provisioned in Directive 2014/53/EU shall apply. If the relevant restrictions are described in the harmonized standards (or parts thereof) the references of which have been published in the Official Journal of the European Union under Directive 2014/53/EU, a performance at least equivalent to these restrictions shall be ensured.
	9	Authorisation regime	Licence exemption	
	10	Additional essential requirements (According to Article 3 Paragraph 3 of 2014/53/EU Directive)	-	
	11	Assumptions on spectrum planning	-	

<b>Informative part</b>	<b>12</b>	<b>Planned changes</b>	-	
	<b>13</b>	<b>Reference</b>	EN 300 330; Commission Implementing Decision (EU) 2022/180 amending Decision 2006/771/EC as regards the update of harmonised technical conditions in the area of radio spectrum use for short-range devices; ERC/REC 70-03	
	<b>14</b>	<b>Notification number</b>	-	
	<b>15</b>	<b>Remarks</b>	-	

F1- RTIR Edition:1; Revision:1

ROMANIA	Radio Interface Specification	SRD / RFID	RO-IR SRD-09-03a	Edition 4/2022
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	No	Parameter	Description	Comments
Normative part	1	Radiocommunication Service	Mobile	
	2	Application	Proximity radio devices (short-range devices) / Radio-frequency identification devices (RFID)	
	3	Frequency band	2 446 – 2 454 MHz	<i>Harmonised radio spectrum for use by short-range devices (Commission Implementing Decision (EU) 2022/180 amending Decision 2006/771/EC as regards the update of harmonised technical conditions in the area of radio spectrum use for short-range devices)</i>
	4	Channelling (channel distribution)	-	
	5	Modulation/Occupied bandwidth	-	
	6	Direction/Separation	-	
	7	Transmit power / Power density	500 mW equivalent isotropic radiated power (e.i.r.p.)	
	8	Channel occupation and access rules	Requirements on techniques to radio spectrum access and mitigate interference shall apply	<i>Techniques to access radio spectrum and mitigate interference shall apply, ensuring an adequate performance level to meet the essential requirements provided in Directive 2014/53/EU. If the relevant techniques are described in the harmonized standards (or parts thereof) the references of which have been published in the Official Journal of the European Union under Directive 2014/53/EU, a performance at least equivalent to the performance of these techniques shall be ensured.</i>
	9	Authorisation regime	Licence exemption	
	10	Additional essential requirements (According to Article 3 Paragraph 3 of 2014/53/EU Directive)	-	
	11	Assumptions on spectrum planning	-	
Informative part	12	Planned changes	-	
	13	Reference	EN 300 440; Commission Implementing Decision (EU) 2022/180 amending Decision 2006/771/EC as regards the update of harmonised technical conditions in the area of radio spectrum use for short-range devices; ERC/REC 70-03	
	14	Notification number	-	
	15	Remarks	-	

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ROMANIA	Radio Interface Specification	SRD / RFID	RO-IR SRD-09-11-03b	Edition 4/2022
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	No	Parameter	Description	Comments
Normative part	1	Radiocommunication Service	Mobile	
	2	Application	Proximity radio devices (short-range devices) / Radio-frequency identification devices (RFID)	
	3	Frequency band	2 446 – 2 454 MHz	
	4	Channelling (channel distribution)	-	
	5	Modulation/Occupied bandwidth	-	
	6	Direction/Separation	-	
	7	Transmit power / Power density	> 500 mW to 4 W e.i.r.p.	<i>Power levels above 500 mW are restricted to be used only inside a building and in this case, the duty cycle of all transmissions shall be ≤ 15 % in any 200 ms period (30 ms on / 170 ms off).</i>
	8	Channel occupation and access rules	Duty cycle: ≤ 15% Only FHSS techniques (Frequency Hopping Spread Spectrum) shall be used	
	9	Authorisation regime	Licence exemption	
	10	Additional essential requirements (According to Article 3 Paragraph 3 of 2014/53/EU Directive)	-	
	11	Assumptions on spectrum planning	-	
Informative part	12	Planned changes	-	
	13	Reference	EN 300 440; ERC/REC 70-03	
	14	Notification number	2014/606/RO	
	15	Remarks	-	

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ROMANIA	Radio Interface Specification	SRD / RFID	RO-IR SRD-09-04	Edition 4/2022
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	No	Parameter	Description	Comments
Normative part	1	Radiocommunication Service	Mobile	
	2	Application	Proximity radio devices (short-range devices) / Radio-frequency identification devices (RFID)	
	3	Frequency band	865 – 868 MHz	<i>Harmonised radio spectrum for use by short-range devices (Commission Implementing Decision (EU) 2022/180 of 8 February 2022 amending Decision 2006/771/EC as regards the update of harmonised technical conditions in the area of radio spectrum use for short-range devices)</i>
	4	Channelling (channel distribution)	-	
	5	Modulation/Occupied bandwidth	≤ 200 kHz	
	6	Direction/Separation	-	
	7	Transmit power / Power density	2 W effective radiated power (e.r.p.) Interrogator transmissions at 2 W e.r.p. are allowed only in the four channels having the central frequencies of 865.7 MHz, 866.3 MHz, 866.9 MHz and 867.5 MHz.  RFID tags respond at a very low power level (-20 dBm e.r.p.), in a range of frequency bands around the RFID interrogator channels and shall comply with the essential requirements of Directive 2014/53/EU.	<i>The RFID interrogators placed on the market before the date of repeal of Decision 2006/804/EC benefit from a clause of precedence, i.e., their continued use is allowed, in accordance with the provisions provided for in Decision 2006/804/EC before the date of repeal.</i>
	8	Channel occupation and access rules	Requirements on techniques to radio spectrum access and mitigate interference shall apply	<i>Techniques to access radio spectrum and mitigate interference shall apply, ensuring an adequate performance level to meet the essential requirements provided in Directive 2014/53/EU. If the relevant techniques are described in the harmonized standards (or parts thereof) the references of which have been published in the Official Journal of the European Union under Directive 2014/53/EU, a performance at least equivalent to the performance of these techniques shall be ensured.</i>
	9	Authorisation regime	Licence exemption	
	10	Additional essential requirements (According to Article 3 Paragraph 3 of 2014/53/EU Directive)	-	

	<b>11</b>	<b>Assumptions on spectrum planning</b>		
<b>Informative part</b>	<b>12</b>	<b>Planned changes</b>	-	
	<b>13</b>	<b>Reference</b>	EN 302 208; Commission Implementing Decision (EU) 2022/180 amending Decision 2006/771/EC as regards the update of harmonised technical conditions in the area of radio spectrum use for short-range devices; ERC/REC 70-03	
	<b>14</b>	<b>Notification number</b>	-	
	<b>15</b>	<b>Remarks</b>	-	

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ROMANIA	Radio Interface Specification	SRD / Non-specific short-range devices	RO-IR SRD-09-05	Edition 4/2022
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	No	Parameter	Description	Comments
Normative part	1	<b>Radiocommunication Service</b>	Mobile	
	2	<b>Application</b>	Proximity radio devices (short-range devices) / Radio-frequency identification devices (RFID)	
	3	<b>Frequency band</b>	916.1 - 918.9 MHz	<i>Harmonised radio spectrum for use by short-range devices (Commission Implementing Decision (EU) 2022/172 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).</i>
	4	<b>Channelling (channel distribution)</b>	-	
	5	<b>Modulation/Occupied bandwidth</b>	Bandwidth: ≤ 400 kHz	
	6	<b>Direction/Separation</b>	-	
	7	<b>Transmit power / Power density</b>	Interrogator transmissions at 4 W e.r.p. are allowed only in the 916.3 MHz, 917.5 MHz and 918.7 MHz central frequencies.  RFID tags respond at a very low power level (-10 dBm e.r.p.), in a range of frequency bands around the RFID interrogator channels and shall comply with the essential requirements of Directive 2014/53/EU.	
	8	<b>Channel occupation and access rules</b>	Techniques to access radio spectrum and mitigate interference shall be used, ensuring an adequate performance level to meet the essential requirements provided in Directive 2014/53/EU. If the relevant techniques are described in the harmonized standards (or parts thereof) the references of which have been published in the Official Journal of the European Union under Directive 2014/53/EU, a performance at least equivalent to the performance of these techniques shall be ensured.	
	9	<b>Authorisation regime</b>	Licence exemption	
	10	<b>Additional essential requirements (According to Article 3 Paragraph 3 of 2014/53/EU Directive)</b>	-	
	11	<b>Assumptions on spectrum planning</b>	-	
Informative part	12	<b>Planned changes</b>	-	
	13	<b>Reference</b>	Commission Implementing Decision (EU) 2022/172 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	
	14	<b>Notification number</b>	-	
	15	<b>Remarks</b>	Deadline for implementation: 1 July 2022	

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