



Expanded unofficial version of Annex 11

to the decision of the State Commission on Radio Frequencies under the Security Council of the Republic of Belarus No. 12K/12 dated 28.08.2012

Version 2022

RADIO FREQUENCY IDENTIFICATION APPLICATIONS

Scope of application

This annex covers frequency bands and regulatory as well as informative parameters recommended for radio frequency identification (RFID) applications including for example automatic article identification, asset tracking, alarm systems, waste management, personal identification, access control, proximity sensors, anti-theft systems, location systems, data transfer to handheld devices and wireless control systems. It should be noted that other types of RFID systems can be operated in accordance with other relevant annexes.



Table 11: Regulatory parameters

Frequency Band	Power / Magnetic Field	Spectrum access and mitigation requirements	Modulation / maximum occupied bandwidth	Harmonised Standards/ Confirmation of compliance	Notes
865-868 MHz	2 W e.r.p. (note 1)	(note 4)	≤ 200 kHz	EN 302 208 (CTБ 1997) IEC 62311 / Regulation of Belarus TR 024 By	Operation only when necessary to perform the intended operation, i.e. when RFID tags are expected to be present. RFID interrogators and tags which operating together as a system. The types of equipment : • fixed interrogators; • hand portable interrogators; • batteryless tags; • battery assisted tags; • battery powered tags.
865-865.6 MHz	100 mW e.r.p.	No requirement	≤ 200 kHz	EN 300 220 EN 302 208 (CTБ 1997) IEC 62311 / Regulation of Belarus TR 024 By	RFID interrogator devices placed on the market before the repeal date of EC Decision 2006/804/EC are ‘grandfathered’, i.e. they are continuously permitted to be used in line with the provisions set out in EC Decision 2006/804/EC
865.6-867.6 MHz	2 W e.r.p.	No requirement	≤ 200 kHz		
867.6-868 MHz	500 mW e.r.p.	No requirement	≤ 200 kHz		



Frequency Band	Power / Magnetic Field	Spectrum access and mitigation requirements	Modulation / maximum occupied bandwidth	Harmonised Standards/ Confirmation of compliance	Notes
915-921 MHz	4 W e.r.p. (notes 2)	To protect ER-GSM systems in the 918-921 MHz band, DAA mode is required	≤ 400 kHz	EN 300 220 IEC 62311 / Regulation of Belarus TR 024 By	Operation only when necessary to perform the intended operation, i.e. when RFID tags are expected to be present.
2446-2454 MHz	≤ 500 mW e.i.r.p.	No requirement	Not specified	EN 300 440 IEC 62311 / Regulation of Belarus TR 024 By	In case of external antennas only loop coil antennas may be employed
2446-2454 MHz	> 500 mW to 4 W e.i.r.p	≤ 15% duty cycle FHSS techniques should be used	Not specified		Power levels above 500 mW are restricted to be used inside the boundaries of a building and the duty cycle of all transmissions shall in this case be ≤ 15 % in any 200 ms period (30 ms on /170 ms off)

Notes:
Note 1.

Interrogator transmissions in sub-band a) at 2 W e.r.p. are only permitted within the four channels centred at 865.7 MHz, 866.3 MHz, 866.9 MHz and 867.5 MHz; each with a maximum bandwidth of 200 kHz. RFID tags respond at a very low power level (-20 dBm e.r.p.) in a frequency range around the RFID interrogator channels.

Note 2.

Transmission of requests in the band 915-921 MHz at e.r.p. 4 W is only allowed on four channels centered at 916.3 MHz, 917.5 MHz, 918.7 MHz and 919.9 MHz with a maximum bandwidth of 400 kHz. RFID tags respond with very low power (-10 dBm e.r.p.) in the frequency range around the RFID interrogator channels.

Note 4

The maximum period of continuous interrogator transmission on a channel shall not exceed 4s and the period between consecutive transmissions of an interrogator on the same channel shall be at least 100ms in order to ensure most efficient use of available channels for the general benefit of all users.



Additional Information

In addition to the above requirements, RFID devices operating in the 2446-2454 MHz band, which may emit more than 500 mW, must be equipped with Automatic Power Control (APC) to reduce the emitted power below 500 mW, this automatic power control should guarantee a power reduction of up to 500 mW in cases where the device is moved and used outside the boundaries of the building or user premises, as described above.

Any emissions from RFID devices operating in the 2446-2454 MHz band, when measured outdoors at a distance of 10 meters, must not exceed the field strength of 500 mW generated by outdoor RFID devices when measured at the same distance. If the building consists of a number of spaces, such as shops within a sales floor or mall, then the measurements should refer to the boundary of the premises for users within the building.

Center frequencies of RFID radio channels in the band 865-868 MHz: $864.9 \text{ MHz} + (0.2 \text{ MHz} * \text{channel number})$

The following radio channel numbers are available for each sub band:

865-865.6 MHz:	1-3
865.6-867.6 MHz:	4-13
867.6-868 MHz:	14-15

Note: Multiple bands are allowed for the same equipment.

Frequency hopping or other radio wave propagation methods must not be used.

The band 918-921 MHz can be used for GSM-R or ER-GSM systems, access of UHF RFID applications to part of the band 918-921 MHz requires the use of interference mitigation techniques such as DAA as stated in [ECC Report 200](#).

DECISION OF THE STATE COMMISSION ON RADIO FREQUENCIES UNDER THE SECURITY COUNCIL OF THE REPUBLIC OF BELARUS

No. [12K/12](#):

«The allocation of radio frequency spectrum for short range radio electronics» (SRD) is based on the European Radiocommunications Committee/Recommendation 70-03 ([ERC/REC 70-03](#)).

All notes indicated in the tables (appendices 1-13 to decision [12K/12](#)) are a mandatory requirement. Appendices 1-13 to Decision [12K/12](#) also partially take into account [COMMISSION IMPLEMENTING DECISION 2013/752/EU](#) on harmonization of the radio spectrum for use by short-range devices.



The current version of the technical regulations

Republic of Belarus "Means of telecommunication. Safety" ([TR 2018/024/BY](#)) **confirmation of compliance is required** for short-range radio communication devices, including radio modules that are part of other equipment operating in the radio frequency band from 25 MHz to 30 GHz (Annex 2, paragraph 10 of the technical regulations)

