COMMUNICATIONS REGULATORY AUTHORITY OF NAMIBIA

No. 446 2021

AMENDMENT OF THE REGULATIONS PRESCRIBING PROCEDURES REGARDING APPLICATION FOR, AND AMENDMENT, RENEWAL, TRANSFER AND CANCELLATION OF SPECTRUM LICENCES: COMMUNICATIONS ACT, 2009

The Communications Regulatory Authority of Namibia, under section 129 read with section 101(14) and section 101(16) of the Communications Act, 2009 (Act No. 8 of 2009) -

(a) Amends the Regulations Prescribing Procedures Regarding Application for, and Amendment, Renewal, Transfer and Cancellation of Spectrum Licences published in the Government Gazette No. 6888, General Notice No. 104 dated 29 April 2019;

(b) Repeals the amendment to the Regulations prescribing Procedures regarding Application for, and Amendment, Renewal, Transfer and Cancellation of Spectrum Licences published in the Government Gazette No. 7196, General Notice No. 152 dated 29 April 2020.

H. M. GAOMAB II
CHAIRPERSON OF THE BOARD
COMMUNICATIONS REGULATORY AUTHORITY OF NAMIBIA

SCHEDULE

Definitions

1. In these Regulations, any word or expression to which a meaning is assigned in the Act, shall have the same meaning and –

"Act" means the Communications Act, 2009 (Act No. 8 of 2009)

"Regulations" means the Regulations Prescribing Procedures Regarding Application for, and Amendment, Renewal, Transfer and Cancellation of Spectrum Licences published in the Government Gazette No. 6888, General Notice No. 104 dated 29 April 2019.

"WRC-19" means World Radio Conference held from 28 October 2019 to 22 November 2019 in Sharm El-Sheikh, Egypt.

Substitution of regulation 12 (9) and 12(10) of Regulations

2. Regulation 12(9) and 12(10) of the Regulations is hereby amended by the substitution of those paragraphs with the following paragraphs:

"(9) The Authority must forthwith publish a notice of the aforesaid application or amendment in terms of sub-regulation (7) in the *Gazette* and invite the public to make written comments to the Authority within the time set out in the notice, which time may not be less than 14 days from the date of the publication.

(10) The Authority will provide the opportunity to an applicant or licensee to respond to any written comments contemplated in sub-regulation (9)."

Insertion of the following sub-regulations after regulation 12(10) of Regulations

3. The Regulations is amended by the insertion of the following sub-regulations after regulation 12(10) of the Regulations:

"(11) An applicant's or licensee's response to public comments must be submitted in writing to the Authority within the time set out by the Authority, which time may be not less than 14 days from the deadline for the submission of public comments or if the notice for submissions of responses is published in a subsequent *Gazette*, not less than 14 days from the date of that publication.

(12) The times for the submissions of public comments and applicant or licensee's responses are to be determined by the Authority in lights of the nature of the application or amendment (in terms of sub-regulation 7).

(13) The Authority may consider written submissions not timeously filed if, in its opinion, it is practical to do so.

(14) The Authority may request further written submissions, such as for further information or clarification, which must be provided to the Authority in the time and the manner set out by the Authority.

(15) All written submissions must-

(a) contain the name and contact details of the person making the written submissions or the name and contact details of the person for whom the written submission is made, if different;

(b) be clear and concise; and

(c) conform to any further requirements determined by the Authority from time to time.

(16) After considering any application made in terms of this regulation and any written or oral submissions, if any referred to herein, the Authority may refuse or grant the application, in whole or in part.

(17) If the Authority grants application the Authority must amend the spectrum license in the form determined and subject to the conditions imposed by the Authority.

(18) After considering any written or oral submissions in respect of an amendment envisaged in sub-regulation 7 or in case of absence of comments thereof, the Authority may amend or refrain from amending the spectrum licence.

(19) The Authority must whether or not requested by an applicant or licensee, furnish reasons for its decision to grant or amend the spectrum license."

Insertion of the following sub-regulations after regulation 16(5) of Regulations

4. The Regulations is amended by the insertion of the following sub-regulations after regulation 16(5) of the Regulations:

"(6) The Authority must forthwith publish a notice of the aforesaid application in the *Gazette* and invite the public to make written comments to the Authority within the time set out in the notice, which time may not be less than 14 days from the date of the publication.

(7) The Authority will provide the opportunity to an applicant to respond to any written comments contemplated in sub-regulation (6).

(8) An applicant's response to public comments must be submitted in writing to the Authority within the time set out by the Authority, which time may be not less than 14 days from the deadline for the submission of public comments or if the notice for submissions of responses is published in a subsequent *Gazette*, not less than 14 days from the date of that publication.

(9) The times for the submissions of public comments and applicant or licensee's responses are to be determined by the Authority in lights of the nature of the application.

(10) The Authority may consider written submissions not timeously filed if, in its opinion, it is practical to do so.

(11) The Authority may request further written submissions, such as for further information or clarification, which must be provided to the Authority in the time and the manner set out by the Authority.

(12) All written submissions must-

(a) contain the name and contact details of the person making the written submissions or the name and contact details of the person for whom the written submission is made, if different;

(b) be clear and concise; and

(c) conform to any further requirements determined by the Authority from time to time.

(13) After considering any application made in terms of this regulation and any written
or oral submissions, if any referred to herein, the Authority may refuse or grant the application, in whole or in part.

(14) The Authority must whether or not requested by an applicant or licensee, furnish reasons for its decision to withdraw or refuse to withdraw the spectrum license."

Substitution of Annexure B

5. The Regulations is amended by the substitution for Annexure B of the following Annexure.

ANNEXURE B

RADIO APPARAUS EXEMPT FROM SPECTRUM LICENSE

Explanation:

1. The use or possession of the radio apparatus listed in Column B below, in accordance with the specifications listed in Columns A, C, D and E of the Table below does not require a spectrum license.

2. Use and possession of all radio apparatus exempt in terms of the above table must comply with the following:

   2.1 All radio apparatus must be type-approved by the Authority or by the Independent Communications Authority of South Africa or, upon request to the Authority, by any other regulatory authority in a country other than Namibia or South Africa.

2.2 The frequencies, transmitting power and external high-gain antenna of the radio apparatus must not be altered without a new type-approved certificate issued by the Authority or any other regulatory authority referred to in paragraph 2.1.

2.3 The radio apparatus must be operated within, and not exceed, the technical parameters set out in each of the applicable Columns C and D of the Table with respect to the frequency band, maximum radiated power or field strength limits and channel spacing, relevant standards and duty cycles and antennas to be used and contained in Column E.

2.4 The antenna of the radio apparatus must not be higher or above average ground level than the lowest point of the place where the radio apparatus operates effectively.

2.5 The radio apparatus may not cause interference with any licensed radio frequency spectrum.

2.6 The user of the radio apparatus in the license-exempt frequency spectrum operates on a non-interference and zero protection basis from interference.

Frequency band	Typical Applications	Maximum power or magnetic field strength	Duty Cycle restriction	Prescribed Channel Spacing	Harmonised Standard	Notes (Additional information)
8.3-9kHz	Inductive applications	82 dBμA/m at 10m	None	None	EN 300 330	Antenna size of < 1/20 λ (see note 1)
9-90 kHz		72 dBμA/m at 10m				RFIDs operating in the frequency sub-band 119-135 kHz shall meet the spectrum mask given in EN 300 330. This will permit a simultaneous use of the various sub-bands within the range 90 – 148.5 kHz (Note 11)
90-119 kHz		42 dBμA/m at 10m				
119-135 kHz		66 dBμA/m at 10m				
135-140 kHz		42 dBμA/m at 10m				
140-148.5 kHz		37.7 dBμA/m at 10m				
9-315 kHz	Active medical implants	30 dBμA/m at 10m	<10%	None	EN 302 195	
400-600 kHz	Inductive applications	-8 dBμA/m at 10 m				For RFID only
442.2-450 kHz	Tracking, Tracing and Data Acquisition	7 dBμA/m at 10m	None	Continuous wave (CW) - no modulation, channel spacing ≥150 Hz		
456.9-457.1 kHz	Tracking, Tracing and Data Acquisition	7 dBμA/m at 10 m	None	Continuous wave (CW) at 457 kHz - no modulation		
3 155-3 400 kHz	Inductive applications	13.5 dBμA/m at 10m	None	None	EN 300 330	ITU-R M.1076 applies RR No. **5.116** applies
6 765-6 795 kHz	- Inductive applications - Non-specific SRDs	42 dBμA/m at 10m	None	None	EN 300 330	ISM band (RR No. **5.138**)
7 400-8 800 kHz	Inductive applications	9 dBμA/m at 10m	None	None	EN 300 330	
10200-11000kHz	Inductive applications	9 dBμA/m at 10m	None	None	EN 300 330	
13553-13567 kHz	Inductive applications	42 dBμA/m at 10m 60 dBμA/m at 10m (for RFID and EAS only)	None	None	EN 302 291	ISM band (RR No. **5.150**)
	Non-specific SRDs	10 mW e.r.p	None	None	EN 300 330	ISM band (RR No. **5.150**)

Frequency band	Typical Applications	Maximum power or magnetic field strength	Duty Cycle restriction	Prescribed Channel Spacing	Harmonised Standard	Notes (Additional information)
26957-27283 kHz	Inductive applications	42 dBμA/m at 10m	None	None	EN 300 220	ISM band (RR No. **5.150**) ERC/DEC/(01)16
	Model control (26990-27200 kHz)	100 mW e.r.p	None	10 kHz	EN 300 220	ERC/DEC/(01)10 (26.995 MHz, 27.045 MHz, 27.095 MHz, 27.145 MHz, 27.195 MHz
	Non-specific SRDs	10 mW e.r.p.	None	None	EN 300 220 EN 300 330	ERC/DEC/(01)02
26990-27200 kHz	Non-specific SRDs	100 mWe.r.p	≤ 0.1 %	None		
29.7-47 MHz	Radio Microphones	10 mW e.r.p.	None	≤ 50 kHz		
30-37.5 MHz	Active Medical Implants	1 mW e.r.p.	≤ 10%	None		
34.995-35.225 MHz	Model Control	100 mW e.r.p	None	10 kHz		Only flying models
40.66-40.7 MHz	Non-specific SRDs	10 mW e.r.p.	None	None	EN 300 220	ISM band (RR No. **5.150**) ERC/DEC/(01)03
	Model control	100 mW e.r.p	None	10 kHz	EN 300 220	ERC/DEC/(01)12 (40.665 MHz, 40.675 MHz, 40.685 MHz, 40.695 MHz)
138.2-138.45 MHz	Non-specific SRDs	10 mW e.r.p.	≤ 1%	None		
169.4-174 MHz	Radio Microphones	10 mW e.r.p.	None	≤ 50 kHz		
169.4-169.5875MHz	Assistive listening devices	500 mW e.r.p.	None	≤ 50 kHz		
169.4-169.475 MHz	Tracking, Tracing and Data Acquisition	500 mW e.r.p.	≤ 10%	≤ 50 kHz		
169.4-169.4875 MHz	Non-specific SRDs (169.4-169.475 MHz)	500 mWe.r.p	≤ 1%	≤ 50 kHz		
	Non-specific SRDs (169.4-169.4875 MHz)	10 mW e.r.p.	≤ 1%			
169.4875-169.5875 MHz	Non-specific SRDs	10 mW e.r.p.	≤ 0.001% duty cycle except for 00:00 h to 06:00 h local time where the duty cycle limit is ≤ 0.1%			

Frequency band	Typical Applications	Maximum power or magnetic field strength	Duty Cycle restriction	Prescribed Channel Spacing	Harmonised Standard	Notes (Additional information)
169.5875-169.8125 MHz	Non-specific SRDs	10 mW e.r.p.	≤ 0.1%			
173.965-216 MHz	Assistive listening devices	10 mW e.r.p.	None	≤ 50 kHz		
174-216 MHz	Radio Microphones	50 mW e.r.p.	None	None		
433.05-434.79 MHz	Non-specific SRDs	10 mW e.r.p. (433.05-434.79 MHz)	<10% (Note 1)	None	EN 300 220	(Note 2)
		1 mW e.r.p. -13 dBm/10 kHz (433.05-434.79 MHz)	None	None	EN 300 220	Power density limited to -13 dBm/10 kHz for wideband modulation with a bandwidth greater than 250 kHz (Note 5)
		10 mW e.r.p. (434.04-434.79 MHz)	None	Up to 25 kHz	EN 300 220	(Note 5)
401-402 MHz	Active medical implants and associated peripherals	25 µW e.r.p.	LBT or duty cycle ≤0.1% (Note 3), p21	25 kHz	EN 302 537	ITU-R RS.1346[1] Max occupied BW = 100 kHz
402-405 MHz		25 µW e.r.p.	(Note 4), p21	25 kHz	EN 301 839	ITU-R RS.1346 Max occupied BW = 300 kHz ERC/DEC/(01)17
405-406 MHz		25 µW e.r.p.	LBT or duty cycle ≤0.1% (Note 4), p21)	25 kHz	EN 302 537	ITU-R RS.1346 Max occupied BW = 100 kHz
446 – 446.2 MHz	PMR446	500 mW		12.5 kHz	EN 300 296	
470-786 MHz	Radio Microphones	50 mW e.r.p.	None	None		
862-863 MHz	Non-specific SRDs	25 mWe.r.p	≤ 0.1%	≤ 350 kHz		
863-865 MHz	Wireless Audio applications	10 mW e.r.p.	None	None	EN 301 357	
	Non-specific SRDs	25 mW e.r.p.	≤ 0.1% duty cycle or LBT+AFA			
864.8-865 MHz	Wireless Audio applications	10 mW e.r.p.	None	50 kHz	EN 300 220	Narrow band analogue voice devices (only this band)

Frequency band	Typical Applications	Maximum power or magnetic field strength	Duty Cycle restriction	Prescribed Channel Spacing	Harmonised Standard	Notes (Additional information)
865-868 MHz	Non-specific SRDs	25 mW e.r.p.	≤ 1% duty cycle or LBT +AFA			
	Tracking, Tracing and Data Acquisition	500 mW e.r.p.	Adaptive Power Control (APC) required for spectrum sharing (note 1) and the following duty cycle restrictions also apply: ≤ 10% duty cycle for network access points; ≤ 2.5% duty cycle otherwise	≤ 200 kHz		
865.0-865.6 MHz	RFID	100 mW e.r.p.	None	200 kHz	EN 302 208	(Note 13)
865.6-867.6 MHz		2 W e.r.p.	None	200 kHz	EN 302 208	
867.6-868.0 MHz		500 mW e.r.p.	None	200 kHz	EN 302 208	
863-870 MHz	Non-specific SRDs	≤ 25 mW e.r.p.	≤ 0.1% or LBT (notes 1 and 5)	≤ 100 kHz for 47 or more channels (note 3)	EN 300 220	FHSS modulation Note4, Note 2, Note 7 and Note 9 Note (TZA)

[1] Sharing between the meteorological aids service and medical implant communication systems (MICS) operating in the mobile service in the frequency band 401-406 MHz.

Frequency band	Typical Applications	Maximum power or magnetic field strength	Duty Cycle restriction	Prescribed Channel Spacing	Harmonised Standard	Notes (Additional information)
863-870 MHz	Non-specific SRDs	≤ 25 mW e.r.p. (note 7) Power density : - 4.5 dBm/100 kHz (note 8)	≤ 0.1% or LBT+AFA (notes 1, 6 and 7)	No spacing	EN 300 220	DSSS and other wideband modulation other than FHSS (Notes 2, 4, 7 and 9) Note (TZA)
		≤ 25 mW e.r.p.	≤ 0.1% or LBT+AFA (notes 1 and note 6)	≤ 100 kHz, for 1 or more channels. Modulation bandwidth ≤ 300 kHz (note 3)		Narrow/wide-band modulation (Notes 2, 4, 7 and 9) Note (TZA)
868-868.6 MHz	Non-specific SRDs	≤ 25 mW e.r.p.	≤ 1% or LBT+AFA (note 1)	No spacing, for 1 or more channels (note 3)	EN 300 220	Narrow / wide-band modulation. No channel spacing, however the whole stated frequency band may be used (Note 2)
868.6-868.7 MHz	Alarms	10 mW e.r.p.	≤ 1%	25 kHz	EN 300 220	Or whole band may be used as 1 channel
868.7-869.2 MHz	Non-specific SRDs	≤ 25 mW e.r.p.	≤ 0.1% or LBT+AFA (note 1)	No spacing, for 1 or more channels (note 3)	EN 300 220	Narrow / wide-band modulation. No channel spacing, however the whole stated frequency band may be used Note (TZA)
869.25-869.3 MHz	Alarms	10 mW e.r.p.	< 0.1%	25 kHz	EN 300 220	Note (TZA)
869.2-869.25 MHz	Alarms	10 mW e.r.p.	< 0.1%	25 kHz	EN 300 220	Social alarms Note (TZA)
869.3-869.4 MHz	Alarms	10 mW e.r.p.	< 1%	25 kHz	EN 300 220	Note (TZA)
869.400-869.650 MHz	Non-specific SRDs	≤ 500 mW e.r.p.	≤ 10% or LBT+AFA (note 1)	25 kHz (for 1 or more channels)	EN 300 220	Narrow / wide-band modulation The whole stated frequency band may be used as 1 channel for high speed data transmission Note (TZA)
869.65-869.7 MHz	Alarms	25 mW e.r.p.	< 10%	25 kHz	EN 300 220	Note (TZA)

Frequency band	Typical Applications	Maximum power or magnetic field strength	Duty Cycle restriction	Prescribed Channel Spacing	Harmonised Standard	Notes (Additional information)
869.700-870.000 MHz	Non-specific SRDs	≤ 5 mW e.r.p.	No requirement	No spacing (for 1 or more channels)	EN 300 220	Narrow / wide-band modulation. No channel spacing, however the whole stated frequency band may be used (Note 5) Note (TZA)
		≤ 25 mW e.r.p.	up to 1% or LBT+AFA (note 1)			
870-874.4 MHz	Tracking, Tracing and Data Acquisition	500 mW e.r.p.	Adaptive Power Control (APC) required for spectrum sharing (note 1) and the following duty cycle restrictions also apply: ≤ 10% duty cycle for network access points; ≤ 2.5% duty cycle otherwise	≤ 200 kHz		
	Non-specific SRDs.	25 mW e.r.p.	≤ 1% duty cycle. For ER-GSM protection (873-876 MHz, where applicable): the duty cycle is limited to ≤ 0.01% and to a maximum transmit on time of 5ms/1s	≤ 600 kHz		
2 446-2 454 MHz	RFID	≤ 500 mW e.i.r.p.	None	None	EN 300 440	2 400-2 500 is a ISM band (RR No. **5.150**) (Note 12)
2 446-2 454 MHz		> 500 mW – 4 W e.i.r.p.	≤ 15% FHSS techniques should be used	None	EN 300 440	2 400-2 500 is a ISM band (RR No. **5.150**) 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). (Note 12)

Frequency band	Typical Applications	Maximum power or magnetic field strength	Duty Cycle restriction	Prescribed Channel Spacing	Harmonised Standard	Notes (Additional information)
2 400-2 483.5 MHz	Non-specific SRDs	10 mW e.i.r.p.	None	None	EN 300 440	2 400-2 500 is a ISM band (RR No. **5.150**)
	Wideband Data Transmission systems (WAS/RLANs)	100 mW e.i.r.p.	See Rec 70-03 note 1 (p9)	None	EN 300 328	2 400-2 500 is a ISM band (RR No. **5.150**) ERC/DEC/(01)07
	Radiodetermination	25 mW e.i.r.p.	None	None	EN 300 440	2 400-2 500 is a ISM band (RR No. **5.150**) ERC/DEC/(01)08
2483.5-2500 MHz	Active Medical Implants	10 dBm e.i.r.p.	LBT+AFA and ≤ 10% duty cycle. The equipment shall implement a spectrum access mechanism as described in the applicable harmonised standard or an equivalent spectrum access mechanism	1 MHz		For Low Power Active Medical Implants and associated peripherals, covered by the applicable harmonised standard. Individual transmitters may combine adjacent channels on a dynamic basis for increased bandwidth higher than 1 MHz. Peripheral units are for indoor use only.
5 150-5 350 MHz	Wideband Data Transmission systems (WAS/RLANs)	200 mW mean e.i.r.p. See note 4, p9	See notes 1 and 3 (p9)	None	EN 301 893	ECC/DEC/(04)08 Restricted to indoor use. The maximum mean e.i.r.p. density shall be limited to 10 mW/MHz in any 1 MHz band For RLANs Resolution 229 (WRC-19) applies.
5 470-5 725 MHz	Wideband Data Transmission systems (WAS/RLANs)	250 mWe.r.p	See notes 1 and 3 (p9)	None	EN 301 893	ECC/DEC/(04)08 Indoor as well as outdoor use allowed. The maximum mean e.i.r.p. density shall be limited to 50 mW/MHz in any 1 MHz band In MWI, TZA and ZMB this band is used for BFWA on a licensed basis.

Frequency band	Typical Applications	Maximum power or magnetic field strength	Duty Cycle restriction	Prescribed Channel Spacing	Harmonised Standard	Notes (Additional information)
5 725-5 875 MHz	Wideband data transmission BFWA is limited to 5725 - 5850 MHz (to protect satellite)	PTP/PTMP: max mean e.i.r.p = 4 W Mesh/AP-MP: max mean e.i.r.p = 2 W			EN 302 502	ISM band (RR No. **5.150**) One of the main bands for wideband data transmission and BFWA (incl. Wi-Fi in laptops, cell phones, etc.) ECC/REC(06)04 refers In MWI this band is used for BFWA on a licensed basis. In AFS this band can be used up to 8W in specific circumstances (refer to national regulations) Footnote 5.453 (WRC-19) applies
5725-5875 MHz	Tracking, Tracing and Data Acquisition	400 mW e.i.r.p. Adaptive Power Control (APC) required	Adequate spectrum sharing mechanisms (e.g. DFS and DAA) shall be implemented	≥ 1 MHz and ≤ 20 MHz		
5 725-5 875 MHz	Non-specific SRDs	25 mW e.i.r.p.	None	None	EN 300 440	
5 795-5 805 MHz	RTTT	2 W e.i.r.p. 8 W e.i.r.p.	None	None	EN 300 674	ECC/DEC/(02)01 Note 10
5 805-5 815 MHz			None	None	EN 300 674	ECC/DEC/(02)01 For this band an individual licence in required in EU Note 10
24.00-24.25 GHz	Non-specific SRDs	100 mW e.i.r.p.	None	None	EN 300 440	ISM band (RR No. **5.150**)
	Radiodetermination	100 mW e.i.r.p.	None	None	EN 300 440	
	RTTT (24.05-24.075 GHz)	100 mW e.i.r.p.	None		EN 300 440	For vehicle radars
	RTTT(24.075-24.15 GHz)	0.1mW e.i.r.p.	None		EN 300 440	For vehicle radars

Frequency band	Typical Applications	Maximum power or magnetic field strength	Duty Cycle restriction	Prescribed Channel Spacing	Harmonised Standard	Notes (Additional information)
24.15-24.25 GHz	RTTT	100 mW e.i.r.p.	None)		EN 300 440	For vehicle radars. The spectrum access and mitigation requirement is given for devices mounted behind a bumper. If mounted without a bumper, the requirement should be 3µs/40kHz maximum dwell time every 3ms
		100 mW e.i.r.p.	≤ 1ms/40kHz dwell time every 40ms (note 1)		EN 300 440	The spectrum access and mitigation requirement is given for devices mounted either behind a bumper or mounted without a bumper
			None		EN 300 440	For vehicle radars
57-64 GHz	Non-Specific SRDs	100 mW e.i.r.p. 10 mW output power	None			
61.0-61.5 GHz	Non-specific SRDs	100 mW e.i.r.p.	None	None		ISM band (RR No. **5.138**)
76-77 GHz	RTTT	55 dBm peak e.i.r.p.	None	None	EN 301 091	ECC/DEC/(02)01 Power level 55 dBm peak power e.i.r.p. 50 dBm average power - 23.5 dBm average power for pulse radar only Vehicle and infrastructure radar systems
77-81 GHz	Automotive Short-Range Radars				EN 302 264	
122-122.25 GHz	Non-Specific SRDs	10 dBm/250MHz e.i.r.p. -48 dBm/MHz at >30° elevation	None	None		
122.25-123 GHz	Non-Specific SRDs	100 mW e.i.r.p.	None	None		
244-246 GHz	Non-Specific SRDs	100 mW e.i.r.p.	None	None		

Footnotes

Note 1: When either duty cycle, Listen-Before-Talk (LBT) or equivalent technique applies then it shall not be user dependent/adjustable and shall be guaranteed by appropriate technical means. For LBT devices without Adaptive Frequency Agility (AFA), or equivalent techniques, the duty cycle limit applies. For any type of frequency agile device the duty cycle limit applies to the total transmission unless LBT or equivalent technique is used.

Note 2: Audio and video applications are allowed provided that a digital modulation method is used with a maximum bandwidth of 300 kHz. Analogue and digital voice applications are allowed with a maximum bandwidth ≤ 25 kHz.

Note 3: The preferred channel spacing is 100 kHz allowing for a subdivision into 50 kHz or 25 kHz.

Note 4: Sub-bands for alarms are excluded (see ERC/REC 70-03 Annex 7).

Note 5: Audio and video applications are excluded. Analogue or digital voice applications are allowed with a maximum bandwidth ≤ 25 kHz and with spectrum access technique such as LBT or equivalent. The transmitter shall include a power output sensor controlling the transmitter to a maximum transmit period of 1 minute for each transmission.

Note 6: Duty cycle may be increased to 1% if the band is limited to 865-868 MHz.

Note 7: For other wide-band modulation than FHSS and DSSS with a bandwidth of 200 kHz to 3 MHz, duty cycle can be increased to 1% if the band is limited to 865-868 MHz and power to ≤10 mW e.r.p.

Note 8: The power density can be increased to +6.2 dBm/100 kHz and -0.8 dBm/100 kHz, if the band of operation is limited to 865-868 MHz and 865-870 MHz respectively.

Note 9: Certain channels may be occupied by RFID operating at higher powers (See Annex 11 for further details). To minimise the risk of interference from RFID, SRDs should use LBT with AFA or observe suitable separation distances. (In the high power RFID channels typically these may vary from 918 m (indoor) to 3.6 km (rural outdoor). In the remaining 2.2 MHz, where tags at -20 dBm e.r.p. occupy the spectrum, this may vary from 24 m (indoor) to 58 m (rural outdoor)). The adjacent frequency bands below 862 MHz and above 870 MHz may be used by high power systems. Manufacturers should take this into account in the design of equipment and choice of power levels.

Note 10: The frequency band 5795-5805 MHz is intended for road to vehicle systems, particularly (but not exclusively) road toll systems. The frequency bands 5795-5805 MHz and 5805-5815 MHz are recommended for 5 MHz channel spacing systems with the frequencies: 5797.5 MHz, 5802.5 MHz, 5807.5 MHz and 5812.5 MHz. For 10 MHz channel spacing systems 5800 MHz and 5810 MHz. 5805 - 5815 MHz on a national basis for multi-lane road junctions, particularly, but not exclusively road toll systems. The use of 8 W e.i.r.p. allows for 1 Mbit/s in accordance with ETSI standard ES 200 674-1. 2W e.i.r.p. allows for 500 kbit/s downlink and 250 kbit/s uplink in accordance with EN 300 674-1 and for low data rates (31 kbit/s) in accordance with EN 300 674-2.
