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THE CIVIL AVIATION ACT,
(CAP. 80)

REGULATIONS

(Made under section 5)

THE CIVIL AVIATION (AERONAUTICAL RADIO FREQUENCY SPECTRUM UTILIZATION) (AMENDMENT) REGULATIONS, 2026

Citation

GN. No. 52 of 2017

1. These Regulations may be cited as the Civil Aviation (Aeronautical Radio Frequency Spectrum Utilization) (Amendment) Regulations, 2026 and shall be read as one with the Civil Aviation (Aeronautical Radio Frequency Spectrum Utilization), Regulations, 2017, hereinafter referred to as the "principal Regulations".

Amendment of regulation 2

2. The principal Regulations are amended in regulation 2 by adding in their appropriate alphabetical order the following new definitions:

""wireless avionic intra-communications" or in its acronym "WAIC" means radiocommunication between two or more aircraft stations located on board a single aircraft for aircraft applications supporting the safe operation of the aircraft which comprises of wireless communications, security and network management components;

"wireless avionic intra-communications system" means a system which provides wireless communications between points on board a single aircraft;".

Addition of regulation 16A

3. The principal Regulations are amended by adding immediately after regulation 16 the following:

"Radio frequency management and interference reporting

16A. The air navigation service provider shall-

(a) establish a procedure for the management and protection of aeronautical radio spectrum;

(b) designate a responsible person to control any frequency allocation within the aeronautical radio spectrum to ensure that there shall be no conflict and interference to any radio stations or facility;

(c) ensure that there is no willful transmission of unnecessary or anonymous radio signals, messages or data by any of its radio stations;

(d) establish procedures with the communication authority to address occurrence of radio frequency interference;

(e) ensure that any frequency interference occurrences are reported, investigated and follow-up actions taken to prevent recurrence; and

(f) keep updated records of all allocated frequencies, and ensure that no facility providing radio signals for the purpose of aviation safety shall be allowed to continue in operation, if there is a suspicion or any cause to suspect that the information being provided by that facility is erroneous.".

Addition of regulation 40A

4. The principal Regulations are amended by adding immediately after regulation 40 the following:

"Utilisation in frequency band 4 200–4 400 MHz

40A. The utilisation in the frequency band 4200-4400MHZ shall be as specified in the Sixth Schedule.".

Addition of Sixth Schedule

5. The principal Regulations are amended by adding immediately after the Fifth Schedule the following:

"

SIXTH SCHEDULE

(Made under regulation 40A)

UTILIZATION IN THE FREQUENCY BAND 4 200–4 400 MHz

Note.— The following provisions for wireless avionic intra-communications define the requirements that ensure that wireless avionic intra-communications systems and radio altimeters can provide their intended functions while multiple aircraft are in mutual radio range. Coexistence between wireless avionic intra-communications systems and radio altimeters installed on board the same aircraft is addressed by the specific implementation and established airworthiness certification processes.

1. Wireless avionic intra-communications systems shall comply with the applicable provisions of these Regulations.

1.2 Wireless avionic intra-communications systems shall only be used for communications related to the safety and regularity of flight between two or more points on a single aircraft.

1.3 Wireless avionic intra-communications systems shall not cause harmful interference to radio altimeter systems and wireless avionic intra-communications systems on other aircraft.

Note.— Compliance with item 1.3 is achieved by limiting the power of wireless avionic intra-communications emissions below the level at which altimeter performance may be affected, consistent with item 1.5 below. European Organisation for Civil Aviation Equipment (EUROCAE)/RTCA Inc. documents ED-

260A/DO-378A provide one acceptable method of demonstrating compliance with that power limit.

1.4 A wireless avionic intra-communications system located on board one aircraft shall perform its intended function while subject to emissions from wireless avionic intra-communications and radio altimeter systems located on board other aircraft.

Note.— EUROCAE/RTCA documents ED-260A/DO-378A provide one acceptable method of demonstrating compliance with item 1.4 via test. Alternatively, the critical coexistence scenario described in those documents may also be used to develop appropriate analyses to demonstrate compliance with item 1.4.

1.5 Radio frequency characteristics of wireless avionic intra-communications systems.

1.5.1 Wireless avionic intra-communications systems shall operate in the frequency band 4 200–4 400 MHz.

1.5.2 The power of the total aggregate emissions of all wireless avionic intra-communications transmitters on board an aircraft shall not exceed an equivalent isotropic radiated power of -20 dBm, assuming a point source is located at the geometrical centre of the aircraft.

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1.5.3 The overall occupied bandwidth shall be maintained completely within the allocated frequency band 4 200–4 400 MHz including any offsets such as Doppler shift or frequency tolerances, where the occupied bandwidth is defined as the bandwidth for which 99 percent of the signal energy falls within the lower and upper frequency limits.

1.5.4 The necessary bandwidth (NB) of the wireless avionic intra-communications transmitter shall be calculated according to table 1-2 below.

	Low data rate system	High data rate system	Units
Transmitter			
Number and location of simultaneously active transmitters per channel	1	1	–
Transmitter antenna gain	0	0	dBi
Max. transmission power[2]	10	50	mW
3 dB emission bandwidth	2.6	16.6	MHz
20 dB emission bandwidth	6	22	MHz
40 dB emission bandwidth	12	60	MHz
Receiver			
Receiver antenna gain[1]	0	0	dBi
Receiver IF-bandwidth	2.6	20	MHz
Receiver noise figure	10	10	dB
Required signal-to-noise ratio	9	14	dB
Receiver sensitivity	–91	–77	dBm
Protection criterion (*I*/*S*)	–9	–14	dB
Min. out of band interference rejection	–10	–10	dB
Front end overload protection level[3]	–30	–30	dBm
Maximum distance between outside WAIC transmitter and receiver[2]	15	15	metre

Table 1-2 Wireless avionic intra-communications bandwidth transmitter

1.5.5 The boundary between the out-of-band and spurious domains shall be determined according to figure 1-3 below:

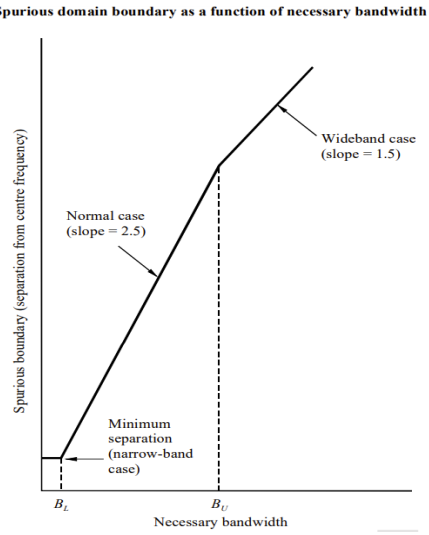

Figure 1-3

Frequency range	Narrow-band case ($B_N < B_L$)		Normal separation	Wideband case ($B_N > B_U$)	
	B_L	Separation		B_U	Separation
9 kHz < f_c < 150 kHz	250 Hz	625 Hz	2.5 B_N	10 kHz	1.5 B_N + 10 kHz
150 kHz < f_c < 30 MHz	4 kHz	10 kHz	2.5 B_N	100 kHz	1.5 B_N + 100 kHz
30 MHz < f_c < 1 GHz	25 kHz	62.5 kHz	2.5 B_N	10 MHz	1.5 B_N + 10 MHz
1 GHz < f_c < 3 GHz	100 kHz	250 kHz	2.5 B_N	50 MHz	1.5 B_N + 50 MHz
3 GHz < f_c < 10 GHz	100 kHz	250 kHz	2.5 B_N	100 MHz	1.5 B_N + 100 MHz
10 GHz < f_c < 15 GHz	300 kHz	750 kHz	2.5 B_N	250 MHz	1.5 B_N + 250 MHz
15 GHz < f_c < 26 GHz	500 kHz	1.25 MHz	2.5 B_N	500 MHz	1.5 B_N + 500 MHz
f_c > 26 GHz	1 MHz	2.5 MHz	2.5 B_N	500 MHz	1.5 B_N + 500 MHz

The required attenuation of the mean power of any unwanted emission relative to the total mean power P shall meet or exceed the following conditions:

(a) 50 percent of NB < f < 150 percent of NB: Linear increase (in dB) from 24dB to 35dB within a reference bandwidth of 4kHz (Note 1);

(b) 150 percent of NB < f < start of the spurious domain: 35 dB within a reference bandwidth of 4 kHz (Note 1); and

(c) spurious domain: 56+10log(P) or 40 dB, whichever is less stringent, measured in a reference bandwidth of 1 MHz (Note 2).

1.6 Out-of-band interference tolerance of a wireless avionic intra-communications receiver

Note.— These requirements describe the out-of-band tolerance in which the wireless avionic intra-communications receiver must meet its performance requirements without taking into account any mitigation afforded by its installation.

1.6.1 Receivers shall tolerate interference from sources operating outside of the frequency band 4 200–4 400 MHz whose total combined emitted power falling within the frequency band 4 200–4 400 MHz as measured at the receiver does not exceed a power spectral density of -120 dBm/MHz.

1.6.2 Receivers shall tolerate interference from sources operating outside of the frequency band 4 200–4 400 MHz whose total combined power as measured at the receiver does not exceed -20 dBm."

Dodoma,
22nd December, 2025

MAKAME M. MBARAWA
Minister for Transport