



THE UNITED REPUBLIC OF TANZANIA

CHAPTER 80

THE CIVIL AVIATION ACT

THE CIVIL AVIATION (AERONAUTICAL RADIO FREQUENCY  
SPECTRUM UTILIZATION) REGULATIONS

[SUBSIDIARY]

REVISED EDITION OF 2026

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CHAPTER 80

THE CIVIL AVIATION ACT

THE CIVIL AVIATION (AERONAUTICAL RADIO FREQUENCY  
SPECTRUM UTILIZATION) REGULATIONS

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CHAPTER. 80

THE CIVIL AVIATION ACT

REGULATIONS

*(Made under section 5)*

THE CIVIL AVIATION (AERONAUTICAL RADIO FREQUENCY  
SPECTRUM UTILIZATION) REGULATIONS

[24<sup>th</sup> February 2017]

[DPG]

GN. Nos.  
52 of 2017  
353 of 2023  
39 of 2026

PART I  
PRELIMINARY PROVISIONS

Citation

1. These Regulations may be cited as the Civil Aviation (Aeronautical Radio Frequency Spectrum Utilization) Regulations.

Interpretation  
GN No.  
39 of 2026  
reg 2

2. In these Regulations unless the context requires otherwise-

“air navigation services” means air traffic services, communication, navigation and surveillance, and aeronautical information services;

“air navigation services facility” means any facility used, available for use, or designed for use in aid of navigation of an aircraft, including airports, landing fields, any structures, mechanisms, lights, beacons, marks, communicating systems, or other instruments or devices used or useful as an aid to the safe taking off, navigation, and landing of aircraft and any combination of such facilities;

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- “air navigation services provider” means an independent entity established for the purpose of operating and managing air navigation services and empowered to manage and use the revenues it generated to cover its costs;
- “alternative means of communication” means a mean of communication provided with equal status, and in addition to the primary means;
- “Authority” means the Tanzania Civil Aviation Authority established under the Act;
- “double channel simplex” means simplex using two frequency channels, one in each direction;
- “duplex” means a method in which telecommunication between two stations can take place in both directions simultaneously;
- “frequency channel” means a continuous portion of the frequency spectrum appropriate for a transmission utilizing a specified class of emission;
- “offset frequency simplex” means a variation of single channel simplex wherein telecommunication between two stations is effected by using in each direction frequencies that are intentionally slightly different but contained within a portion of the spectrum allotted for the operation;
- “operational control communications” means communications required for the exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of the safety of the aircraft and the regularity and efficiency of a flight;
- “primary means of communication” means the means of communication to be adopted normally by aircraft and ground stations as a first choice where alternative means of communication exist;
- “simplex” means a method in which telecommunication between two stations takes place in one direction at a time;
- “single channel simplex” means a simplex using the same frequency channel in each direction;

“VHF digital link (VDL)” means a constituent mobile sub-network of the aeronautical telecommunication network (ATN), operating in the aeronautical mobile VHF frequency band and which may provide non-ATN functions such as, digitized voice;

“VHF” means Very High Frequency;

“wireless avionic intra-communications” or in its acronym “WAIC” means radio communication 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; and

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

Application

3. These Regulations shall apply to a person providing communication, navigation and surveillance (CNS) services within a designated air space and at aerodromes.

## PART II GENERAL REQUIREMENTS

Requirements for  
CNS facilities

4. The minimum requirements for installation, commissioning, operation and maintenance of the CNS facilities shall conform to these Regulations.

Certification of  
CNSP

GN No.  
61 of 2017

5. A person who wishes to provide CNS service or operate a facility to support an air traffic service shall apply for an ANSP certificate in the manner specified by the Civil Aviation (Certification of Air Navigation Service Provider) Regulations.

Approval  
requirement

6.-(1) A person shall not provide communication, navigation and surveillance systems or operate communication, navigation and surveillance

facility or facilities in the designated airspace and aerodromes unless the system or facility has been approved by the Authority.

(2) The Authority shall approve installation, use, decommissioning, upgrading or relocation of all the communication, navigation and surveillance facility or facilities in the designated airspace and aerodromes.

Inspections and  
Audits  
GN. No  
353 of 2023  
reg.2

7.-(1) The authority shall carry out safety inspections and audits on CNS facilities, documents and records of the CNS facilities to determine compliance in accordance with these Regulations.

(2) An inspector of the authority shall have unrestricted access to facilities, installations, records and documents of the service provider for the purposes of determining compliance with these Regulations.

(3) The Authority shall forward to the ANSP the inspection and audit report including any corrective action required of the inspections and audits.

(4) The ANSP shall submit to the Authority, a corrective action plan for addressing the deficiencies within the time stipulated in the audit report and implement the plan proposed by the Authority.

(5) The ANSP who fails to implement the plan within the time prescribed in the report commits an offence.

Sitting and  
installation

8.-(1) The ANSP shall determine the site for installation of a new facility based on operational requirements, construction aspects and maintainability.

(2) The facility in subregulation 1 shall be installed by maintenance personnel who are fully qualified in air navigation facilities and who have knowledge of the operations, testing, and maintenance of the CNS facilities.

Commissioning  
requirement

9.-(1) CNS facilities shall be confirmed during commissioning and subsequent maintenance that the facility achieves and continues to meet the standard operating parameters and applicable figures recorded.

(2) The ANSP shall-

- (a) establish procedures to ensure that each new facility is commissioned to meet the specifications for that facility and is in compliance with these Regulations;
- (b) ensure that the system performance of the new facility has been validated by all necessary tests; and
- (c) ensure that procedures include documentation of tests conducted on the facility prior to the commissioning, including those that test the compliance of the facility with the applicable standards and any flight check required in compliance with these Regulations.

Availability and  
reliability  
GN No  
353 of 2023  
reg.3

10.-(1) The ANSP shall be responsible for the provision of communication, navigation and surveillance services and facilities to ensure availability of telecommunication information and data necessary for the safe, regular and efficient operation of air navigation.

(2) The functional specification of the ANSP's telecommunication services shall include values and characteristics as follows:

- (a) availability;
- (b) reliability;
- (c) accuracy;
- (d) integrity;
- (e) mean time between failure (MTBF); and
- (f) mean time to repair (MTTF).

(3) The values and characteristics prescribed in subregulation (2) shall be derived and measured from-

- (a) the configuration of each service; or
- (b) the known performance of each service.

(4) The ANSP shall prescribe in the operations manual the method used to calculate values and characteristics.

(5) The values and characteristics for a radio navigation service shall be given for the type of navigation aid facility that forms part of the service.

## Test equipment

11.-(1) The CNS provider shall-

- (a) ensure that appropriate tools and test equipment are available for personnel to maintain the operation of equipment;
- (b) establish a procedure to control, calibrate, and maintain all the equipment required; and
- (c) use documented procedures to control, calibrate and maintain test equipment.

(2) The maintenance plan or the operating and maintenance instructions for each facility shall specify the test equipment requirements for all levels of operation and maintenance undertaken.

## Record keeping

12. A CNS provider shall establish procedures to identify, collect, index, store, maintain, and dispose records covering-

- (a) the performance and maintenance history of each facility;
- (b) the establishment of the periodic test programmes for each facility;
- (c) each item of test equipment required for the measurement of critical performance parameters;
- (d) each reported or detected facility malfunction;
- (e) each internal quality assurance review; and
- (f) each person who is authorised to place facilities into operational service.

Documentation  
GN. No  
353 of 2023  
reg 4

13.-(1) ANSP shall maintain documents which are necessary for the provision, operation and maintenance of the facility including-

- (a) records of occurrences and actions relating to operation, maintenance, modification, failure, faults, removal from and restoration to service;
- (b) procedure for the control of documentation;
- (c) records of malfunction and safety incident reports;
- (d) records of internal audit reports;

- (e) records of investigation into serious incidents;
- (f) copies of relevant equipment manual, technical standards, practices, instructions, maintenance procedures or site log books.

(2) Subject to subregulation (1), the ANSP shall establish the procedure for authorisation and amendment of documents to ensure that they are constantly updated.

Periodic  
inspection and  
testing

14.-(1) A CNS provider shall establish a procedure for the periodic inspection and testing of communication, navigation and surveillance systems so as to ensure that each facility meets the applicable operational requirements and performance specifications.

(2) The periodic inspection shall include-

- (a) security of the facility and site;
- (b) adherence to the approved maintenance programme;
- (c) upkeep of the equipment, building, site and site services; and
- (d) adequacy of facility records and documentation.

Flight inspection

15. A CNS provider shall ensure that the radio navigation aids prescribed by the Authority are available for use by aircraft engaged in air navigation and are subjected to periodic ground and flight inspection.

Operation and  
maintenance plan

16.-(1) A CNS provider shall establish an operation and maintenance plan that meets the safety requirements stipulated in these Regulations.

(2) The operation and maintenance plan established under subregulation 1 shall provide for the timely and appropriate detection and warning of system failures and degradations.

Radio frequency  
management and  
interference  
reporting  
GN No.

16A. The air navigation service provider shall-

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

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reg. 3

- (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.

Training  
requirements for  
CNS personnel

17. A CNS Provider shall-

- (a) ensure that all its personnel possess the skills and competencies required in the provision of communication navigation and surveillance services;
- (b) develop a training policy and programme for the organization;
- (c) maintain individual training records and plan for each of its staff;
- (d) conduct periodic review of the training Plan.

CNS personnel  
requirements

18.-(1) A CNS provider shall-

- (a) employ sufficient number of competent personnel to perform the installation, operation and maintenance of communication, navigation and surveillance system in the designated airspace and aerodromes as prescribed by the Authority;

- (b) provide in the Manual of Air Navigation Service Operations an analysis of the personnel required to perform the communication navigation and surveillance services for each facility taking into account the duties and workload required.

(2) A person shall not perform a function related to the installation, operation or maintenance of any communication, navigation and a surveillance system unless-

- (a) he has successfully completed training in the performance of that function;
- (b) he has been certified as prescribed by the Authority;
- (c) a CNS provider is satisfied that the technical person is competent in performing that function.

Proficiency  
certification  
program

19. The Authority shall develop proficiency certification program of personnel who are engaged in the installation, operation and maintenance of communication, navigation and surveillance systems used in the designated airspace and aerodrome.

Installation,  
operation and  
maintenance of  
CNS systems

20. A CNS provider shall establish a procedure to ensure that the communication, navigation and surveillance systems-

- (a) are operated, maintained, available and reliable in accordance with the requirements prescribed by the Authority;
- (b) are designed to meet the applicable operational specification for that facility;
- (c) are installed and commissioned as prescribed by the Authority; and
- (d) conform to the applicable system characteristics and specification as prescribed in by the Authority.

### PART III

### DISTRESS FREQUENCIES

Frequencies for emergency locator transmitters (ELTs) for search and rescue

21. All emergency locator transmitters carried in accordance with Civil Aviation (Operations of Aircraft) Regulations and shall operate on both 406 MHz and 121.5 MHz.

Search and rescue frequencies

22.-(1) The frequencies 3 023 kHz and 5 680 kHz shall be employed where there is a requirement for the use of high frequencies for search and rescue scene of action coordination purposes.

(2) Where specific frequencies are required for communication between rescue coordination centres and aircraft engaged in search and rescue operations, they shall be selected regionally from the appropriate aeronautical mobile frequency bands in light of the nature of the provisions made for the establishment of search and rescue aircraft.

#### PART IV UTILIZATION OF FREQUENCIES BELOW 30 MHz

Method of operations

23. In the aeronautical mobile service, a single channel simplex shall be used in radiotelephone communications utilizing radio frequencies below 30 MHz in the bands allocated exclusively to the aeronautical mobile (R) service.

Assignment of single sideband channels  
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24. Single sideband channels shall be assigned in accordance with provisions contained in the First Schedule and the Civil Aviation (Surveillance and Collision Avoidance Systems) Regulations.

Assignment of frequencies for aeronautical operational control communications

25. Assignment of frequencies for aeronautical operational control communications shall be in accordance with the provisions contained in paragraph 1.2 of the First Schedule.

Non directional beacon frequency management

26.-(1) Non directional beacon frequency management shall take into account the following:  
(a) the interference protection required at the edge of the rated coverage;

- (b) the application of the figures shown for typical Automatic Direction Finder equipment;
- (c) the geographical spacings and the respective rated coverages; and
- (d) the possibility of interference from spurious radiation generated by non-aeronautical sources.

(2) To alleviate frequency congestion problems at locations where two separate ILS facilities serve opposite ends of a single runway, the assignment of a common frequency to both of the outer locators and the assignment of a common frequency to both of the inner locators shall be permitted, provided that-

- (a) the operational circumstances permit;
- (b) each locator is assigned a different identification signal; and
- (c) arrangements are made whereby locators using the same frequency cannot radiate simultaneously.

## PART V

### UTILIZATION OF FREQUENCIES ABOVE 30 MHz

General allotment  
of frequency band  
117.975-137.000  
MHz

27. The block allotment of the frequency band 117.975-37.000 MHz shall be as specified in Table 1.1 in the Second Schedule.

Frequency  
separation and  
limits of  
assignable  
frequencies

28.-(1) The-

- (a) lowest assignable frequency shall be 118.000 MHz; and
- (b) the highest 136.975 MHz in the frequency band shall be 117.975-137.000 MHz.

(2) The minimum separation between assignable frequencies in the aeronautical mobile (R) service shall be 8.33 kHz.

(3) The requirements for mandatory carriage of equipment specifically designed for 8.33 kHz channel spacing shall be made on the basis of regional air navigation agreements which specify the airspace of operation and the implementation timescales for the

carriage of equipment, including the appropriate lead time.

(4) Requirements for mandatory carriage of equipment specifically designed for VDL Mode 2, VDL Mode 3 and VDL Mode 4 shall be made on the basis of regional air navigation agreements which specify the airspace of operation and the implementation timescales for the carriage of equipment, including the appropriate lead time.

(5) The agreement in subregulation (4) shall provide at least two years' notice of mandatory carriage of airborne systems.

(6) In regions where 25 kHz channel spacing (DSBAM and VHF digital link (VDL)) and 8.33 kHz DSB-AM channel spacing are in operation, the publication of the assigned frequency or channel of operation shall conform to the channel contained in Table 1-2 of the Second Schedule.

Frequencies used  
for particular  
functions

29.-(1) The emergency channel, 121.500 MHz, shall only be used for the following genuine emergency purposes:

- (a) to provide a clear channel between aircraft in distress or emergency and a ground station when the normal channels are being utilized for other aircraft;
- (b) to provide a VHF communication channel between aircraft and aerodromes, not normally used by international air services, in case of an emergency condition arising;
- (c) to provide a common VHF communication channel between aircraft, either civil or military, and between such aircraft, and surface services, involved in common search and rescue operations, prior to changing when necessary to the appropriate frequency;
- (d) to provide air-ground communication with aircraft when airborne equipment failure prevents the use of the regular channels;
- (e) to provide a channel for the operation of emergency locator transmitters, and for

communication between survival craft and aircraft engaged in search and rescue operations;

- (f) to provide a common VHF channel for communication between civil aircraft and intercepting aircraft or intercept control units and between civil or intercepting aircraft and air traffic services units in the event of interception of the civil aircraft.

(2) The frequency 121.500 MHz shall be provided at:

- (a) all area control and flight information centres;
- (b) aerodrome control towers, approach control offices serving international aerodromes and international alternate aerodromes; and
- (c) any additional location designated by the appropriate ATS authority, where the provision of that frequency is considered necessary to ensure immediate reception of distress calls or to serve the purposes specified in subregulation (1).

(3) The frequency 121.500 MHz shall be available to intercept control units where considered necessary for the purpose specified in sub regulation (1) (f).

(4) The emergency channel shall be-

- (a) guarded continuously during the hours of service of the units at which it is installed;
- (b) guarded on a single channel simplex operation basis; and
- (c) be available only with the characteristics as contained in the Civil Aviation (Surveillance and Collision Avoidance Systems) Regulations.

(5) An air-to-air VHF communications channel on the frequency of 123.450 MHz shall be designated to enable aircraft engaged in flights over remote and oceanic areas out of range of VHF ground stations to exchange necessary operational information and to facilitate the resolution of operational problems.

(6) In remote and oceanic areas out of range of VHF ground stations, the air-to-air VHF communications channel on the frequency 123.450 MHz shall be available only with the characteristics as specified in the Civil Aviation (Surveillance and Collision Avoidance Systems) Regulations, 2017.

Common  
signalling  
channel VDL  
mode 4

30. In areas where VDL Mode 4 is implemented, the frequencies 136.925 MHz and 113.250 MHz shall be provided as common signalling channels to the VHF digital link Mode 4.

Auxiliary  
frequencies for  
search and  
rescue  
operations

31.-(1) Where a requirement is established for the use of a frequency auxiliary to 121.500 MHz, the frequency 123.100 MHz shall be used.

(2) The auxiliary search and rescue channel 123.100 MHz shall only be available with the characteristics as specified in Civil Aviation (Surveillance and Collision Avoidance Systems) Regulations.

Provisions  
concerning the  
deployment of  
VHF frequencies  
and the avoidance  
of harmful  
interference

32. The provisions relating to the deployment of VHF frequencies and the avoidance of harmful interference shall be as specified in the Third Schedule.

Method of  
operation

33.-(1) The single channel simplex operation shall be used in the frequency band 117.975-137 MHz at all stations providing service for aircraft engaged in international air navigation.

(2) In addition to subregulation (1), the ground-to-air voice channel associated with a standard radio navigational aid shall be used, subject to regional agreement, for broadcast or communication purposes or both.

Plan of assignable  
VHF radio  
frequencies for  
use in

34. The frequencies-

(a) in the band 117.975-137.000 MHz for use in the aeronautical mobile (R) service shall be

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International  
aeronautical  
mobile service

selected from the lists specified in the Fourth Schedule;

- (b) for operational control communications required to enable aircraft operating agencies meet the obligations prescribed in Civil Aviation (Operation of Aircraft) Regulations shall be selected from a dedicated band which is determined regionally; and
- (c) allotted for use in the aeronautical mobile (R) service in a particular region shall be limited to the number determined as being necessary for operational needs in the region.

Utilization in  
band 108-  
117.975 MHz

35. The block allotment of the frequency band 108-117.975 MHz shall be-

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(a) for band 10-111.975 MHz-

- (i) ILS in accordance with subregulation (2) and the Civil Aviation (Radio Navigation Aids) Regulations;

(ii) VOR provided that-

(aa) no harmful adjacent channel interference is caused to ILS;

(bb) only frequencies ending in either even tenths or even tenths plus a twentieth of a megahertz are used; and

(cc) Global Navigation Satellite Systems ground-based augmentation system in accordance with Civil Aviation (Radio Navigation Aids) Regulations, except that no harmful interference is caused to Instrument Landing System and VHF Omni-directional Range; and

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(b) for band 111.975-117.975 MHz-

- (i) VHF Omni-Directional Range; and
- (ii) Global Navigation Satellite Systems ground-based augmentation system

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in accordance with Civil Aviation (Radio Navigation Aids) Regulations, except that no harmful interference is caused to VHF Omni-directional Range.

Regional  
assignment  
planning

36.-(1) The frequencies for ILS facilities for regional assignment planning shall be selected in the following order:

- (a) localizer channels ending in odd tenths of a megahertz and their associated glide path channels;
- (b) localizer channels ending in odd tenths plus a twentieth of a megahertz and their associated glide path channels.

(2) ILS channels identified by localizer frequencies ending in an odd tenth plus one twentieth of a megahertz in the band 108-111.975 MHz shall be permitted to be utilized on the basis of regional agreement.

(3) For regional assignment planning, the frequencies for VHF Omni-directional Range facilities shall be selected in the following order:

- (a) frequencies ending in odd tenths of a megahertz in the band 111.975-117.975 MHz;
- (b) frequencies ending in even tenths of a megahertz in the band 111.975-117.975 MHz;
- (c) frequencies ending in even tenths of a megahertz in the band 108-111.975 MHz;
- (d) frequencies ending in 50 kHz in the band 111.975-117.975 MHz, except as provided in subregulation (4);
- (e) frequencies ending in even tenths plus a twentieth of a megahertz in the band 108-111.975 MHz except as provided in subregulation (4).

(4) Frequencies for VHF Omni-directional Range facilities ending in even tenths plus a twentieth of a megahertz in the band 108-11.975 MHz and all

frequencies ending in 50 kHz in the band 111.975-117.975 MHz shall be permitted to be utilized on the basis of a regional agreement when they have become applicable in accordance with the following:

- (a) in the band 111.975-17.975 MHz for restricted use;
- (b) for general use in the band 111.975-117.975 MHz at a date fixed by the Council but at least one year after the approval of the regional agreement concerned;
- (c) for general use in the band 108-111.975 MHz at a date fixed by the Council but giving a period of two years or more after the approval of the regional agreement concerned.

Airborne  
equipment  
protection while  
deploying VHF  
Omni-Directional  
Range systems

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37. All existing VHF Omni-directional Range systems within interference range of a facility utilizing 50 kHz channel spacing shall be modified to comply with the provisions of Civil Aviation (Radio Navigation Aids) Regulations 2016 in order to protect the operation of airborne equipment during the initial stages of deploying VHF Omni-directional Range systems utilizing 50 kHz channel spacing in an area where the existing facilities do not fully conform to the Civil Aviation (Radio Navigation Aids) Regulations.

Frequency  
deployment

38.-(1) The geographical separation between facilities operating on the same and adjacent frequencies shall be determined regionally and be based on the following criteria:

- (a) the required functional service radii of the facilities;
- (b) the maximum flight altitude of the aircraft using the facilities; and
- (c) the desirability of keeping the minimum Instrument Flight Region altitude as low as the terrain will permit.

(2) To alleviate frequency congestion problems at locations where two separate Instrument Landing System facilities serve opposite ends of the same runway

or different runways at the same airport, the assignment of identical instrument landing system localizer and glide path paired frequencies shall be permitted provided that-

- (a) the operational circumstances permit;
- (b) each localizer is assigned a different identification signal; and
- (c) arrangements are made whereby the localizer and glide path not in operational use cannot radiate.

Utilization in  
band 960 – 1 215  
MHz for Distance  
Measuring  
Equipment

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39.-(1) Distance Measuring Equipment operating channels bearing the suffix “X” or “Y” as contained in the Civil Aviation (Radio Navigation Aids) Regulations 2016 shall be chosen on a general basis without restriction.

(2) Distance Measuring Equipment channels bearing the suffix “W” or “Z” in the Civil Aviation (Radio Navigation Aids) Regulations shall be chosen on the basis of regional agreement when they become applicable.

(3) For regional assignment planning, the channels for Distance Measuring Equipment associated with instrument landing systems shall be selected from Table 5-1 as specified in the Fifth Schedule.

Distance  
measuring  
equipment  
channels groups 1  
to 5

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40.-(1) The distance measuring equipment channels in these groups shall be permitted to be used generally.

(2) In selecting channels for assignment purposes, when an distance measuring equipment is intended to operate on a runway in association with an instrument landing system, the distance measuring equipment channel, if possible, shall be selected from Group 1 or 2 and paired with the instrument landing system frequency as indicated in the Distance Measuring Equipment channelling and pairing table contained in Civil Aviation (Radio Navigation Aids) Regulations.

Utilisation in  
frequency band 4  
200–4 400 MHz

40A. The utilisation in the frequency band 4200 – 4400 MHz shall be as specified in the Sixth Schedule.

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## PART VI EXEMPTIONS

Requirements for  
application for  
exemption

41.-(1) A person may apply to the Authority for an exemption from any provision of these Regulations.

(2) Unless in case of emergency, a person requiring exemptions from any of these Regulations shall make an application to the Authority at least sixty days prior to the proposed effective date, giving the following information:

- (a) name and contact address including electronic mail and fax if any;
- (b) telephone number;
- (c) a citation of the specific requirement from which the applicant seeks exemption;
- (d) justification for the exemption;
- (e) a description of the type of operations to be conducted under the proposed exemption;
- (f) the proposed duration of the exemption;
- (g) an explanation of how the exemption would be in the public interest;
- (h) a detailed description of the alternative means by which the applicant will ensure a level of safety equivalent to that established by the regulation in question;
- (i) a safety risk assessment carried out in respect of the exemption applied for;
- (j) if the applicant handles international operations and seeks to operate under the proposed exemption, an indication whether the exemption would contravene any provision of the standards and recommended practices of the International Civil Aviation Organization (ICAO); and
- (k) any other information that the Authority may require.

(3) Where the applicant seeks emergency processing of an application for exemption, the

application shall contain supporting facts and reasons for not filing the application within the time specified in subregulation (2) and satisfactory reason for deeming the application an emergency.

(4) The Authority may in writing, refuse an application made under subregulation (3), where in the opinion of the Authority, the reasons given for emergency processing are not satisfactory.

(5) The application for exemption shall be accompanied by fee to be prescribed by the Authority.

Review and publication.

42.-(1) The Authority shall review the application for exemption and upon being satisfied, publish a detailed summary of the application for comments, within a prescribed time, in either-

- (a) aeronautical information circular; or
- (b) a local newspaper which is in wide circulation.

(2) Where application requirements have not been fully complied with, the Authority shall request the applicant, in writing, to comply with the necessary requirements prior to publication or making a decision under subregulation (3).

(3) Where the request is for emergency relief, the Authority shall publish the decision as soon as possible after processing the application.

Evaluation of request

43.-(1) Where the application requirements have been satisfied, the Authority shall conduct an evaluation of the request to -

- (a) determine whether an exemption is of the public interest;
- (b) a determine, after a technical evaluation, whether the applicant's proposal would provide a level of safety equivalent to that established by the regulation, although where the Authority decides that a technical evaluation of the request would impose a significant burden on the Authority's technical resources, and the Authority may deny the exemption on that basis;

- (c) a determine whether the grant of the exemption would contravene these Regulations; and
  - (d) issue a recommendation based on the preceding elements, of whether the request should be granted or denied, and of any conditions or limitations that should be part of the exemption.
- (2) The Authority shall notify the applicant in writing of the decision to grant or deny the request and publish a detailed summary of its evaluation and decision.
- (3) The summary referred to in subregulation (2) shall specify the duration of the exemption and any conditions or limitations of the exemption.
- (4) Where the exemption affects a significant population of the aviation community of the United Republic the Authority shall publish the summary in aeronautical information circular.

## PART VII GENERAL PROVISIONS

Drug and alcohol  
testing and  
reporting

- 44.-(1) A person who performs any function prescribed by these Regulations directly or by contract may be tested for drug or alcohol usage.
- (2) A person who-
- (a) refuses to be tested on the percentage of the amount of alcohol in the blood;
  - (b) refuses to be tested on the presence of narcotic drugs, marijuana, or depressant or stimulant drugs or substances in the body when requested by a law enforcement officer or the Authority; or
  - (c) refuses to furnish or to authorize the release of the test results requested by the Authority, shall-
- (i) be denied any license, certificate, rating, qualification, or authorisation issued under these Regulations for a

period of up to one year from the date of that refusal; or

- (ii) have their license, certificate, rating, qualification, or authorisation issued under these Regulations suspended or revoked.

(3) A person who is convicted for the violation of any local or national statute relating to the use, growing, processing, manufacture, sale, disposition, possession, transportation, or importation of narcotic drugs, marijuana, or depressant or stimulant drugs or substances, shall-

- (a) be denied any license, certificate, rating, qualification, or authorisation issued under these Regulations for a period of up to one year after the date of conviction; or
- (b) have their licence, certificate, rating, qualification, or authorisation issued under these Regulations suspended or revoked.

Change of name

45.-(1) A holder of a certificate issued under these Regulations may apply to the Authority for-

- (a) a replacement of the certificate if lost or destroyed;
- (b) a change of name on the certificate; or
- (c) an endorsement on the certificate.

(2) The application in subregulation (1) shall be accompanied by-

- (a) the original certificate or a copy thereof in case of loss; and
- (b) a court order, or other legal document verifying the name change.

(3) The Authority shall, after satisfying itself of the documents submitted pursuant to subregulation (2), return the original documents but it may, where it deems necessary, retain copies of the same.

Change of address

46.-(1) A holder of a certificate issued under these Regulations shall notify the Authority of any change in the physical and mailing address within fourteen days prior to the change.

(2) A person who does not notify the Authority of the change in the physical and mailing address within the time frame specified in subregulation (1) shall not exercise the privileges of the certificate.

Replacement of documents

47. A person may apply to the Authority in the prescribed form for replacement of documents issued under these Regulations if such documents are lost or destroyed.

Use and retention of documents and records

48.-(1) A person shall not-

- (a) use any certificate or exemption issued or required by or under these Regulations which has been forged, altered, cancelled, or suspended, or to which he is not entitled;
- (b) forge or alter any certificate or exemption issued or required by or under these Regulations;
- (c) lend any certificate or exemption issued or required by or under these Regulations to any other person;
- (d) make any false representation for the purpose of procuring for himself or any other person the grant, issue, renewal or variation of any such certificate or exemption; or
- (e) mutilate, alter, render illegible or destroy any records, or any entry made therein, required by or under these Regulations to be maintained, or knowingly make, or procure or assist in the making of, any false entry in any such record, or wilfully omit to make a material entry in such record.

(2) All information required to be maintained under these Regulations shall be recorded in a permanent and indelible material.

(3) A person shall not issue a certificate or exemption unless he-

- (a) is authorised to do so by the Authority; or

- (b) has satisfied himself that all statements in the certificate are correct, and that the applicant is qualified to hold that certificate.

Reports of  
violation

49.-(1) A person who knows of a violation of the Act, or any Regulations, rules, or orders issued thereunder, shall report it to the Authority.

(2) The Authority may determine the nature and type of investigation or enforcement action that need to be taken.

Failure to comply  
with direction

50. A person who fails to comply with any direction given to him by the Authority or by any authorised person under any provision of these Regulations commits an offence.

Aeronautical fees

51.-(1) The Authority shall issue a written notification of the fees to be charged in connection with the issuance, renewal or variation of any certificate, test, inspection or investigation required by, or for the purpose of these Regulations of any orders, notices or proclamations made thereunder.

(2) An applicant shall, before the application is considered, pay the fee so chargeable.

(3) Where an applicant decides to withdraw his application after, payment of the relevant prescribed fee, or where the application ceases to have effect or is refused, the Authority, shall not refund the fee paid.

Appeals

52. Where a person is aggrieved by any order made under these Regulations the person may, within twenty one days of such order being made, appeal against the order to a court of law with competent jurisdiction.

## PART VIII OFFENCES AND PENALTIES

Penalties

53.-(1) A person who contravenes any provision of these Regulations, orders, notices or proclamations made thereunder shall, on conviction, be liable to a fine

not exceeding one million shillings or to imprisonment for a term not more than six months or both, and in the case of a continuing contravention, each day of the contravention shall constitute a separate offence.

(2) Where it is proved that an act or omission of any person, which would otherwise have been a contravention by that person of a provision of these Regulations, orders, notices or proclamations made thereunder was due to any cause not avoidable by the exercise of reasonable care by that person, the act or omission shall be deemed not to be a contravention by that person of that provision.

General penalty

54. A person who contravenes any provision of these Regulations for which no penalty has been provided, commits an offence and-

- (a) shall, on conviction be liable to a fine of the sum equivalent in Tanzanian shillings of five hundred United States dollars; and
- (b) may, on conviction have his certificate, approval, authorisation, exemption or such other document revoked or suspended.

## FIRST SCHEDULE

*(Made under regulation 24)*

- 1.1 Assignment of single sideband channels
- 1.1.1 For the operational use of the channels concerned administrations shall take into account the provisions of 27/19 of Appendix 27 of the ITU Radio Regulations.
- 1.1.2 *The use of aeronautical mobile (R) frequencies below 30 MHz for international operations should be coordinated as specified in Appendix S27 of the ITU Radio Regulations as follows:*
- 27/19 The International Civil Aviation Organization (ICAO) co-ordinates radio communications of the aeronautical mobile (R) service with international aeronautical operations and this Organization should be consulted in all appropriate cases in the operational use of the frequencies in the Plan.
- 1.1.3 *Where international operating requirements for HF communications cannot be satisfied by the Frequency Allotment Plan at Part 2 of Appendix 27 to the Radio Regulations, an appropriate frequency may be assigned as specified in Appendix 27 by the application of the following provisions:*
- 27/20 It is recognized that not all the sharing possibilities have been exhausted in the Allotment Plan contained in this Appendix. Therefore, in order to satisfy particular operational requirements which are not otherwise met by this Allotment Plan, administrations may assign frequencies from the aeronautical mobile (R) bands in areas other than those to which they are allotted in this Plan. However, the use of the frequencies so assigned must not reduce the protection to the same frequencies in the areas where they are allotted by the Plan below that determined by the application of the procedure defined in Part I, Section II B of this schedule.
- 27/21 When necessary to satisfy the needs of international air operations administrations may adapt the allotment procedure for the assignment of aeronautical mobile (R) frequencies, which assignments shall then be the subject of prior agreement between administrations affected.
- 27/22 The co-ordination described in No. 27/19 shall be effected where appropriate and desirable for the efficient utilization of the frequencies in question, and especially when the procedures of No. 27/21 are unsatisfactory.
- 1.1.4 The use of classes of emission J7B and J9B shall be subject to the following provisions of Appendix 27:
- 27/12 For radiotelephone emissions the audio frequencies will be limited to between 300 and 2 700 Hz and the occupied bandwidth of other authorized emissions will not exceed the upper limit of J3E emissions. In specifying these

limits, however, no restriction in their extension is implied in so far as emissions other than J3E are concerned, provided that the limits of unwanted emissions are met (see Nos. 27/73 and 27/74).

27/14 On account of the possibility of interference, a given channel should not be used in the same allotment area for radiotelephony and data transmissions.

27/15 The use of channels derived from the frequencies indicated in 27/18 for the various classes of emissions other than J3E and H2B will be subject to special arrangements by the administrations concerned and affected in order to avoid harmful interference which may result from the simultaneous use of the same channel for several classes of emission.

1.2 Assignment of frequencies for aeronautical operational control communications

1.2.1 Worldwide frequencies for aeronautical operational control communications are required to enable aircraft operating agencies to meet the obligations prescribed in Civil Aviation (Operations of Aircraft) Regulations. Assignment of these frequencies shall be in accordance with the following provisions of Appendix 27:

27/9 A world-wide allotment area is one in which frequencies are allotted to provide long distance communications between an aeronautical station within that allotment area and aircraft operating anywhere in the world.\*

27/217 The world-wide frequency allotments appearing in the tables at No. 27/213 and Nos. 27/218 to 27/231, except for carrier (reference) frequencies 3 023 kHz and 5 680 kHz, are reserved for assignment by administrations to stations operating under authority granted by the administration concerned for the purpose of serving one or more aircraft operating agencies. Such assignments are to provide communications between an appropriate aeronautical station and an aircraft station anywhere in the world for exercising control over regularity of flight and for safety of aircraft. World-wide frequencies are not to be assigned by administrations for MWARA, RDARA and VOLMET purposes. Where the operational area of an aircraft lies wholly within a RDARA or subRDARA boundary, frequencies allotted to those RDARAs and sub-RDARAs shall be used.

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 SECOND SCHEDULE
 

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(Made under regulation 27 and 28)

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1.1 Table 1-1: Allotment table

|     | Block allotment frequencies (MHz) | Worldwide utilization                                   | Remarks                                                                                                                                                                                        |
|-----|-----------------------------------|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (a) | 118.000 – 121.450 inclusive       | International and National Aeronautical Mobile Services | Specific international allotments will be determined in the light of regional agreement.                                                                                                       |
| (b) | 121.500                           | Emergency frequency                                     | In order to provide a guard band for the protection of the aeronautical emergency frequency, the nearest assignable frequencies on either side of 121.500 MHz are 121.450 MHz and 121.550 MHz. |
| (c) | 121.550 – 121.9917 inclusive      | International and National Aeronautical Mobile Services | Reserved for ground movement, preflight checking, air traffic services, clearances, and associated operations.                                                                                 |
| (d) | 122.000 – 123.050 inclusive       | National Aeronautical Mobile Services                   | Reserved for national allotments.                                                                                                                                                              |
| (e) | 123.100                           | Auxiliary frequency SAR                                 | In order to provide a guard band for the protection of the aeronautical auxiliary frequency, the nearest assignable frequencies on either side of 123.100 MHz are 123.050 MHz and 123.150 MHz. |
| (f) | 123.150 – 123.6917 inclusive      | National Aeronautical Mobile Services                   | 123.450 MHz which is also used as an air-to-air communications channel (see (g))                                                                                                               |
| (g) | 123.450                           | Air-to-air communications                               | Designated for use as provided under these Regulations                                                                                                                                         |
| (h) | 123.700 – 129.6917 inclusive      | International and National Aeronautical Mobile Services | Specific international allotments will be determined in light of regional agreement                                                                                                            |
| (i) | 129.700 – 130.8917 inclusive      | National Aeronautical Mobile Services                   | Reserved for national allotments but may be used in whole or in part, subject to regional agreement.                                                                                           |

|     |                                |                                                               |                                                                                            |
|-----|--------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| (j) | 130.900 – 136.875<br>inclusive | International and National<br>Aeronautical Mobile<br>Services | Specific international<br>allotments will be determined<br>in light of regional agreement. |
| (k) | 136.900 – 136.975<br>inclusive | International and National<br>Aeronautical Mobile<br>Services | Reserved for VHF air-ground<br>data link communications.                                   |

Table 1-2: Channeling/frequency pairing (Regulation 28(6))

| Frequency (MHz) | Time slot | Channel Spacing (MHz) | Channel |
|-----------------|-----------|-----------------------|---------|
| 118.0000        |           | 25                    | 118.000 |
| 118.0000        | A         | 25                    | 118.001 |
| 118.0000        | B         | 25                    | 118.002 |
| 118.0000        | C         | 25                    | 118.003 |
| 118.0000        | D         | 25                    | 118.004 |
| 118.0000        |           | 8.33                  | 118.005 |
| 118.0083        |           | 8.33                  | 118.010 |
| 118.0167        |           | 8.33                  | 118.015 |
| 118.0250        | A         | 25                    | 118.021 |
| 118.0250        | B         | 25                    | 118.022 |
| 118.0250        | C         | 25                    | 118.023 |
| 118.0250        | D         | 25                    | 118.024 |
| 118.0250        |           | 25                    | 118.025 |
| 118.0250        |           | 8.33                  | 118.030 |
| 118.0333        |           | 8.33                  | 118.035 |
| 118.0417        |           | 8.33                  | 118.040 |
| 118.0500        |           | 25                    | 118.050 |
| 118.0500        | A         | 25                    | 118.051 |
| 118.0500        | B         | 25                    | 118.052 |
| 118.0500        | C         | 25                    | 118.053 |
| 118.0500        | D         | 25                    | 118.054 |
| 118.0500        |           | 8.33                  | 118.055 |
| 118.0583        |           | 8.33                  | 118.060 |
| 118.0667        |           | 8.33                  | 118.065 |
| 118.0750        | A         | 25                    | 118.071 |
| 118.0750        | B         | 25                    | 118.072 |
| 118.0750        | C         | 25                    | 118.073 |
| 118.0750        | D         | 25                    | 118.074 |
| 118.0750        |           | 25                    | 118.075 |
| 118.0750        |           | 8.33                  | 118.080 |
| 118.0833        |           | 8.33                  | 118.085 |
| 118.0917        |           | 8.33                  | 118.090 |
| 118.1000        |           | 25                    | 118.100 |

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THIRD SCHEDULE

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(Made under regulation 32)

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- 1.1 Deployment of VHF frequencies and the avoidance of harmful interference
- 1.1.1 The geographical separation between facilities operating on the same frequency shall, except where there is an operational requirement for the use of common frequencies for groups of facilities, be such that the protected service volume of one facility is separated from the protected service volume of another facility by a distance not less than that required to provide a desired to undesired signal ratio of 20 dB or by a separation distance not less than the sum of the distances to the associated radio horizon of each service volume, whichever is smaller.
- 1.1.2 For areas where frequency assignment congestion is severe or is anticipated to become severe, the geographical separation between facilities operating on the same frequency shall, except where there is an operational requirement for the use of common frequencies for groups of facilities, be such that the protected service volume of one facility is separated from the protected service volume of another facility by a distance not less than that required to provide a desired to undesired signal ratio of 14 dB or by a separation distance not less than the sum of the distances to the associated radio horizon of each service volume, whichever is smaller. This provision shall be implemented on the basis of a regional air navigation agreement.
- 1.1.3 The application of the minimum separation distance based on the sum of the radio horizon distance of each facility assumes that it is highly unlikely that two aircraft will be at the closest points between and at the maximum altitude of the protected service volume of each facility.
- 1.1.4 The distance to the radio horizon from a station in an aircraft is normally given by the formula:
- $D = K \sqrt{h}$   
where D = distance in nautical miles;  
h = height of the aircraft station above earth;  
K = (corresponding to an effective earth's radius of 4/3 of the actual radius);  
= 2.22 when h is expressed in metres; and  
= 1.23 when h is expressed in feet.
- 1.1.5 In calculating the radio line-of-sight distance between a ground station and an aircraft station, the distance from the radio horizon of the aircraft station computed from Note 3 must be added to the distance from the radio horizon of the ground

station. In calculating the latter, the same formula is employed, taking for  $h$  the height of the ground station transmitting antenna.

- 1.1.6 The geographical separation between facilities operating on adjacent channels shall be such that points at the edge of the protected service volume of each facility are separated by a distance sufficient to ensure operations free from harmful interference.
- 1.1.7 The protection height shall be a height above a specified datum associated with a particular facility, such that below it harmful interference is improbable.
- 1.1.8 The protection height to be applied to functions or to specific facilities shall be determined regionally, taking into consideration the following factors:
  - (a) the nature of the service to be provided;
  - (b) the air traffic pattern involved;
  - (c) the distribution of communication traffic;
  - (d) the availability of frequency channels in airborne equipment;
  - (e) probable future developments.
- 1.1.9 Where the protected service volume is less than operationally desirable, separation between facilities operating on the same frequency should not be less than that necessary to ensure that an aircraft at the upper edge of the operational service volume of one facility does not come above the radio horizon with respect to emissions belonging to the service of adjacent facilities.
- 1.1.10 The effect of this recommendation is to establish a geographical separation distance below which harmful interference is probable.
- 1.1.11 The geographical separation between VHF VOLMET stations shall be determined regionally and shall be such that operations free from harmful interference are secured throughout the protected service volume of each VOLMET station.
- 1.1.12 In the frequency band 117.975 – 137.000 MHz, the frequencies used for National Aeronautical Mobile Services, unless worldwide or regionally allotted to this specific purpose, shall be so deployed that no harmful interference is caused to facilities in the International Aeronautical Mobile Services.
- 1.1.13 The problem of inter-State interference shall be resolved by consultation between the States concerned.
- 1.1.14 The communication coverage provided by a VHF ground transmitter shall, in order to avoid harmful interference to other stations, be kept to the minimum consistent with the operational requirement for the function.

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FOURTH SCHEDULE

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*(Made under regulation 34)*

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ASSIGNABLE FREQUENCIES

1.1 List of assignable frequencies shall be;

1.1.1 List A – assignable frequencies in regions or areas where 25 kHz frequency assignments are deployed

118.000 – 121.450 MHz in 25 kHz steps

121.550 – 123.050 MHz in 25 kHz steps

123.150 – 136.975 MHz in 25 kHz steps

1.1.2 List B – assignable frequencies in regions or areas where 8.33 kHz frequency assignments are deployed

118.000 – 121.450 MHz in 8.33 kHz steps

121.550 – 123.050 MHz in 8.33 kHz steps

123.150 – 136.475 MHz in 8.33 kHz steps

## FIFTH SCHEDULE

*(Made under regulation 39(3))*

## Channels for DME Associated with ILS

1.1 Table 5-1: Channels for DME associated with ILS

| Group | DME channels     | Associated paired VHF channels             | Remarks                                                                      | Assignment procedure |
|-------|------------------|--------------------------------------------|------------------------------------------------------------------------------|----------------------|
| 1.    | EVEN 18X to 56X  | ILS 100 kHz spacings                       | Would normally be used if a single DME is paired with ILS and is part of MLS | For general use      |
| 2.    | EVEN 18Y to 56Y  | ILS 50 kHz spacings                        |                                                                              | For general use      |
| 3.    | EVEN 80Y to 118Y | VOR 50 kHz spacings<br>Odd tenths of a MHz |                                                                              | For general use      |
| 4.    | ODD 17Y to 55Y   | VOR 50 kHz spacings                        |                                                                              | For general use      |
| 5.    | ODD 81Y to 119Y  | VOR 50kHz spacings<br>Even tenths of a MHz |                                                                              | For general use      |
| 6.    | EVEN 18W to 56W  | No associated paired VHF channel           |                                                                              | For later use        |
| 7.    | EVEN 18Z to 56Z  | No associated paired VHF channel           |                                                                              | For later use        |
| 8.    | EVEN 80Z to 118Z | No associated paired VHF channel           |                                                                              | For later use        |
| 9.    | ODD 17Z to 55Z   | No associated paired VHF channel           |                                                                              | For later use        |
| 10.   | ODD 81Z to 119Z  | No associated paired VHF channel           |                                                                              | For later use        |

## SIXTH SCHEDULE

(Made under regulation 40A)

GN No.  
39 of 2026  
reg 5

## 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.

## B-4

- 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 |
|-----------------------------------------------------------------------------|----------------------|-----------------------|-------|
| <b>Transmitter</b>                                                          |                      |                       |       |
| Number and location of simultaneously active transmitters per channel       | 1                    | 1                     | –     |
| Transmitter antenna gain                                                    | 0                    | 0                     | dBi   |
| Max. transmission power <sup>2</sup>                                        | 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   |
| <b>Receiver</b>                                                             |                      |                       |       |
| Receiver antenna gain <sup>1</sup>                                          | 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 <sup>3</sup>                            | –30                  | –30                   | dBm   |
| Maximum distance between outside WAIC transmitter and receiver <sup>2</sup> | 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:

Spurious domain boundary as a function of necessary bandwidth

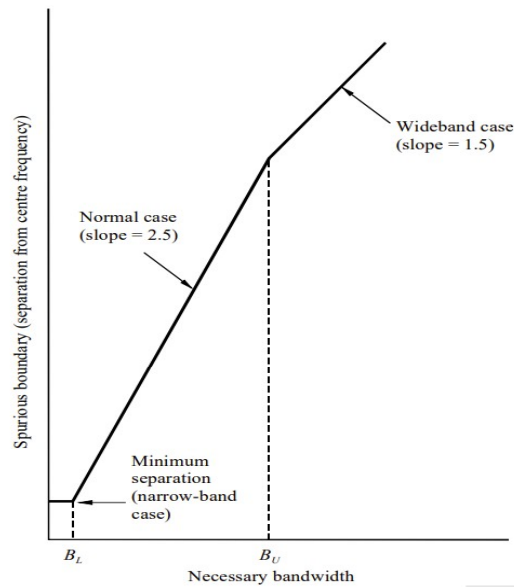


Figure 1-3

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

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  $NB < f < \text{start of the spurious domain}$ : 35 dB within a reference bandwidth of 4 kHz (Note 1); and
- (c) spurious domain:  $56 + 10\log(P)$  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-ofband tolerance in which the wireless avionic intracommunications 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.

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