



**COMMUNICATIONS
AUTHORITY OF KENYA**

Procedure for Licensing

Use of Radio Frequencies and Resolution of
Harmful Interference

Opening your world



Introduction

One of the primary responsibilities of the Authority is the management of the country's frequency spectrum resource. Frequency spectrum management is the combination of administrative, regulatory and technical procedures necessary to ensure the efficient utilization of the frequency spectrum resource. In particular, spectrum management is the overall process of regulating and administering access to and use of the radio frequency spectrum.

The frequency spectrum is a scarce and finite public resource that can support a finite number of users. Managing the radio spectrum therefore involves weighing up a range of competing factors to ensure the optimal use of all frequency bands. These factors may include:

- ensuring that the requirements of all radio services are met in an appropriate manner;
- maximizing social benefits arising from radio use, for example, in relation to public safety, national security and emergency; and
- enhancing the country's competitiveness by ensuring that adequate spectrum is allocated and assigned to uses that derive reasonable economic value.

Radio Spectrum Services/Users

- Public Telecommunications Operators such as Mobile and Fixed service operators
- Broadcasting Services (Television and Sound)
- Radio networks for private communications
- Personal hobbies such as amateur radio
- Safety applications such as in Aeronautical and Maritime services
- Satellite Services
- Meteorological Aids Services
- Earth exploration and space services
- Radio Navigation services
- Government departments

Frequency Spectrum Management functions

The Authority manages Kenya's frequency spectrum through the following.

- Frequency Spectrum Planning, which entails:
 - √ Allocating frequency spectrum to major operators
 - √ Identifying frequencies for assignment to users
 - √ Formulation and review of guidelines for use of frequencies

- √ Maintenance and review of the Kenya Table of Frequency Allocation (TOFA), that is freely downloadable from the Authority website: www.ca.go.ke
- √ Spectrum Audit and Re-farming.
- √ National frequency coordination to facilitate sharing by various services and users
- √ International frequency coordination to avoid mutual interference between administrations
- √ Formulation and review of the radio frequency spectrum fee charging methodologies with a view to ensuring the costs of spectrum management activities are met, ensure efficient use of the radio frequency spectrum, and/or maximize the economic benefit derived from spectrum use

- Frequency Spectrum Licensing, which involves:

- √ Issuance and renewal of licences.

- Frequency Spectrum Inspection and Monitoring, which entails:

- √ Inspection and monitoring of radio networks to verify compliance with licence conditions
- √ Measuring spectrum usage for planning and assignment purposes
- √ Carrying out interference resolution

- Participation in international and regional forums so as to protect and promote national interests.

Fixed, Cellular mobile, Fixed wireless access, Trunked radio and Paging services

Radio frequency licences under this category include point-to-point links, point-to-multipoint links, fixed wireless access, studio to transmitter links, cellular mobile, trunked radio systems and paging. If it is the intention of the applicant to use spectrum for provision of services to the public, it is a prerequisite that the applicant first obtains the relevant licence from the Authority.

The Authority may decide to associate Spectrum with a service operator licence such as has been the case in public cellular mobile service, or to assign spectrum using market-based mechanisms such as auctions. Such spectrum is therefore then not available for assignment as described in the procedure below. The same may apply to fixed wireless access, trunked radio, paging or broadcasting services depending on the approach the Authority decides to assign such spectrum especially in cases where the demand exceeds spectrum availability.

Application Procedure for Radio links

The procedure for applying and obtaining a frequency licence under this category is as follows:

- The applicant files an application with the Authority by completing the prescribed Application Form. Applications involving a radio network with multiple links should be accompanied with a detailed network lay out. The duly completed form together with any additional attachments should be returned to the Authority together with a non-refundable application fee of Ksh1,000.
- The Authority examines the application to determine conformity with the provisions of the national Table of Frequency Allocations (TOFA) and other relevant documents in regard to the proposed frequency band and technical parameters. In case of favourable findings, the Authority carries out technical analysis, identifies and reserves suitable frequencies for assignment to the applicant. Where it is not possible to assign the frequency, the applicant is advised appropriately.
- Where frequencies have been identified for assignment, the Authority reverts to the applicant with an offer to assign frequencies together with relevant terms and conditions. The applicant is also advised to pay the applicable frequency fee before the assignment of frequencies. Once the applicant remits the frequency fee, the Authority assigns the reserved frequencies and the applicant is required to put the frequency into use within the timeframe indicated in the assignment letter. In addition, the applicant is required to ensure that the radio equipment to be used is duly type approved/accepted by the Authority prior to installation and use. If the applicant fails to utilize the assigned frequencies within the timeframe stipulated in the conditions of assignment, the Authority is at liberty to revoke the assignment.
- The Authority issues a radio communication licence once the applicant has obtained type approval/acceptance for proposed radio equipment and has paid the frequency licence fee.

The period of validity of a frequency licence is one year or part thereof and must be renewed annually by payment of the applicable frequency licence fee. All radio licences expire on the 30th of June each year and must be renewed by then or earlier if continued use of the assigned frequency is desired.

Procedure for Renewal of Frequency licence for Fixed Links, Paging, Trunked radio, Mobile Cellular, VSAT/Satellite and Fixed Wireless Access Network

At the end of every financial year, the licensee files network returns comprising the status of licensee's existing network(s) by duly completing the prescribed form. The returns can be filed in electronic format and is the basis that CA uses to compute the licence renewal fee once reconciliation with records maintained by CA has been successfully completed. The same form (i.e. CA/F/FSM/13) is used for renewal of frequency licences for fixed links, paging, trunked radio, mobile cellular, VSAT/Satellite and fixed wireless access networks.

Private Land Mobile Radio Networks Service in the HF/VHF/UHF frequency bands

Land Mobile Services are radio communications between radio stations that are fixed on land with others are in motion (mobile) or fixed on land. Private radio networks are used for communication within a closed-user group and are therefore not used to provide a public service.

Application Procedure

The process of authorization and licence administration of private radio networks in the land Mobile Service is as follows:

- The applicant makes an application to the Authority for authorization to establish a radio network by completing the prescribed Application Form giving details of the proposed network configuration, and attaches all the necessary documents.
- The Authority receives this application package and peruses it for completeness. If not complete, the applicant is asked for the missing details or documents. If complete, the applicant is required to pay a nonrefundable application fee of Kshs. 1,000.
- For applications requiring prior clearance from the government, the application is forwarded to the relevant government agencies for clearance. The Authority forwards this application for consideration and approval by the Communication Licensing Committee (CLC), whose membership is drawn from the the Authority and relevant government agencies. The CLC makes a collegiate decision on the licensing eligibility of the applicant based on the legal, regulatory and policy standpoints.
- In case of an unfavourable finding by the CLC, the Authority communicates to the applicant that the application has been considered and found to be without merit.
- In case of a favourable finding, the Authority communicates the same and sends out a data form for the applicant to indicate the technical and operating data of the proposed radio equipment. In addition, the Authority advises the applicant on the amount of the applicable frequency licence fees to be paid based on the configuration of the network. The applicant is expected to duly complete the data form and submit it together with the applicable licence fee.
- Upon receipt of the completed form the Authority, the Authority checks whether the proposed radio equipment has been type approved/accepted. If the same has not been type approved/accepted, the applicant is requested to seek for type approval from the Authority's Licensing, Compliance & Standards Department. Type approval/acceptance involves checking the technical and operating parameters of the equipment against the Authority's specifications and international standards to confirm that the radio equipment is compliant.

- After ensuring the technical acceptability of the equipment, the Authority carries out technical analysis and subsequently assigns suitable frequency(ies) to the applicant. The applicant then requests the equipment suppliers to programme the radio equipment to the assigned frequency(ies). Then both the supplier and the applicant complete and submit a declaration form to the Authority.
- Upon receipt of the duly completed form, the Authority issues a licence for the new network(s). This licence shall contain details such as location, operating frequency, allowable frequency stability, maximum allowable power, maximum antenna height where necessary, operating times, licence renewal date, and conditions of the licence.

The period of validity of a frequency licence is one year or part thereof and must be renewed at the expiry of the period by paying the appropriate licence renewal fee. All radio licences expire on the 30th of June each year and must be renewed by then or earlier if continued use of the assigned frequency is desired.

As a part of the licence administration process, the Authority is bound to cancel or suspend licences in cases where licensees violate the conditions of the licence. Examples of violations include failure to renew the licence, operating outside the assignment parameters, and use of non-type approved/accepted equipment, etc.

Aeronautical and Aircraft Radio Station Licences

These are licences for radio equipment mounted aboard an aircraft for purposes of communication with other aircrafts or stations on land. The licence is for radio equipment, which forms the mandatory communication requirements on board an aircraft that is specified by the International Civil Aviation Organization (ICAO). ICAO, an agency of the United Nations, is responsible for specifying the principles and techniques of international air navigation and fosters the planning and development of international air transport to ensure safe and orderly growth.

Application Procedure

The procedure for obtaining an aircraft station licence or an aeronautical station licence from the Authority is as follows:

- The applicant applies for an aircraft radio station licence from the Authority by completing the prescribed application form and paying a non-refundable frequency application fee of Kshs1,000. The applicant is also required to submit the associated documents specified in the Application Form, which should be duly certified by a Commissioner of Oaths.
- The Authority studies the application together with the attached supporting documents and if satisfied, the applicant is advised on the applicable fee.
- The Authority issues the radio station licence to the applicant upon payment of the applicable frequency fee

and on confirmation that the radio equipment is compliant with the ICAO requirements. The licence specifies the details of licensed equipment model and technical parameters, aircraft registration number, applicable frequency (ies) and conditions associated with the licence.

The licence issued is valid for a period of one year or part thereof, and must be renewed once it expires. All aircraft radio station licences expire on the 30th June of every year.

Maritime and Ship Radio Station Licences

This is a licence for radio equipment mounted aboard a maritime vessel such as a ship for purpose of communication between the ship with other ships or with stations on land. The licence is for the radio equipment, which forms the mandatory communications requirements specified by the International Maritime Organization (IMO) as well as the Safety of Life at Sea Convention of 1974 (SOLAS-74). IMO is a specialized agency of the United Nations that is responsible for measures to improve the safety and security of international shipping and to prevent marine pollution from ships.

The Kenya Maritime Authority (KMA) is the regulatory agency for the maritime sector in Kenya. The Authority has already signed an MOU with KMA that allows KMA to receive and do preliminary processing of maritime licence applications for radiocommunication equipment on maritime vessels. Therefore applications for radio licence can be channeled directly to the Authority or through KMA.

Application Procedure

The procedure for obtaining a ship station licence is as follows:

- The applicant applies for a ship station licence, coast station licence or a port station licence from the Authority by completing the prescribed application form and paying a non-refundable frequency application fee of Kshs1,000.
- The applicant is also required to submit the relevant documents as specified in the application form duly certified by a Commissioner of Oaths.
- KMA carries out inspection of the radio installations aboard the maritime vessel on behalf of the Authority and prepares a report of the findings. KMA forwards the inspection report to the applicant or directly to the Authority.
- The Authority studies the duly completed application form together with the associated supporting documents. If satisfied, the applicant is advised on the frequency licence fee to be paid in accordance with the approved frequency fee schedule.

- The Authority issues a maritime vessel radio licence to the applicant once the frequency fee is paid and the radio equipment has been confirmed to meet the IMO requirements. The license specifies the details of licensed equipment model and technical parameters, maritime vessel registration number, applicable frequencies and conditions associated with the license.
- The maritime vessel radio station licence issued is valid for a period of one year or part thereof, and must be renewed once it expires. All maritime vessel radio station licenses expire on the 30th June of every year.

Amateur Services

Amateur radio service is a non-commercial service used by radio amateurs for purposes of recreation, self training and technical investigations. Amateur radio use is also beneficial during disaster management especially when the public communication infrastructure has been damaged. Usually, amateur enthusiasts form associations and members communicate among themselves or just listen to broadcasts on amateur frequencies.

In Kenya, most amateur licensees are members of the Amateur Radio Association of Kenya. There are three categories of amateur licences namely full, temporary and novice/student amateur. For the full and temporary amateur licence categories, proof of competence to operate an amateur radio must be produced. Students studying engineering are eligible for novice amateur licences. The Authority and the Amateur Radio Association of Kenya work closely in coordinating and ascertaining the level of competence of radio amateur licence applicants.

Application Procedure

The procedure for applying for a licence to operate an amateur radio service is as follows:

- The applicant files an application with the Authority by completing the prescribed application form and submitting the relevant documents specified in the application form duly certified by a Commissioner of Oaths.
- The applicant pays the applicable (non-refundable) license application fee to The Authority (The fee is Ksh1,000 for full or temporary amateurs and Kshs 200 for novice/student amateurs) upon submission of the application.
- The Authority examines the application together with the attachments to determine eligibility of the applicant for an amateur licence.

✓ For applicants who are Kenyan citizens, the Authority ascertains their technical qualifications and if satisfied, proceeds with the processing of the application. The applicant is informed accordingly if the application is successful or not.

✓ For applicants who are not Kenyan citizens, the Authority will liaise with their home country licensing authorities to ascertain validity of the documents submitted to support proof of their level of competence. Once confirmation is received, the Authority determines the equivalent Kenyan Amateur licence to issue and consequently advises the applicant whether the application is successful or not.

- The Authority notifies the applicant regarding the frequency fee to be paid in accordance with the approved frequency fee schedule as well as the requirement to have the radio equipment type approved/accepted by the Authority(if not already type approved).
- Once the applicant remits the frequency fee and the equipment is type approved, the Authority prepares the relevant amateur licence or authorization. In the case of Full Amateurs and Temporary Amateurs, the amateur licence contains details of eligible frequency bands and conditions of the licence. In addition, a certificate that is valid for a period of one year is prepared for each of these two amateur categories. With respect to applications for novice /student amateurs, the Authority grants an authorization, in writing, valid for a period of one year for certain selected frequencies.

The Full Amateur licence is issued for an indefinite period of time until such time the Authority modifies the licence while the certificate must be renewed every financial year for the licence to remain valid. For Temporary Amateur licence, the period of validity of both the certificate and the licence is 12 months from the date of issue.

Citizen Band Radio Licence

This is a licence to operate a low power mobile or portable radio transceiver operating in the frequency band 27 MHz. The power output of radio equipment used for this service is limited to 5 watts. This service is common for on-site communications such as in construction sites, quarries, etc.

Application Procedure

The procedure for obtaining a citizen band radio licence is as follows:

- The applicant files an application with the Authority by completing the prescribed form together with the following items.

- √ Sample of the Citizen Band (CB) radio equipment complete with associated accessories and attachments
- √ Technical Manuals for the CB radio equipment
- √ Certified copy of National ID or Passport of Applicant (certification is done by a Commissioner of Oaths)
- √ Certified copy of P.I.N. certificate of the applicant
- The applicant also pays a non-refundable application fee of Ksh1,000 as well as a non-refundable type approval/ acceptance fee of Ksh. 500.
- The Authority examines the application taking into consideration the purpose for which the service is required and makes a decision. Further, the CB radio equipment is evaluated by the Licensing, Compliance & Standards Department against set specifications. If the equipment is complaint, type approval/ acceptance is granted.
- The Authority communicates its decision to the applicant. For approved applications, the applicant is requested to pay the one-time CB licence fee of Kshs. 1,000.
- The applicant is then requested to have the CB radio equipment programmed by an authorized agent, and to complete Form before returning it to the Authority .
- Upon receipt of confirmation that the radio equipment is appropriately programmed, the Authority issues a CB radio frequency licence together with the associated licence conditions.
- The licence issued is a one-time licence valid for indefinite period until such time that the Authority decides to modify the validity period or there is a change in the CB band allocation.

Low Power Private Mobile Radio Services in 446 MHz band

Authority for the operation of low power two-way radio in the 446 MHz band on class licence basis and the use of the band does not require a frequency licence. The target applications are closed user groups short-range communications such as within construction sites, hotels, estates, farms, residences, holiday resorts and family picnics.

Whereas there is no frequency fee charged for the use of this band, it is a mandatory requirement that any user desiring to use radio equipment must ensure that the system is duly type approved by the Authority prior to use. the Authority issues guidelines which specify the frequencies that may be used, equipment standards/features,

technical and operational parameters. The guidelines limit the frequency band and transmitter power of systems allowed in the band as follows:

Frequency Band (MHz)	Maximum Effective Radiated Power (ERP)
446.00625- 446.09375	500mW

The authorized ERP powers are expected to self-limit the coverage of such systems, and where necessary, will be reviewed by the Authority to ensure that the systems operate as expected.

As a minimum, the systems should use an integral antenna only in order to maximize sharing and minimize interferences, and a channel plan based on 12.5 KHz spacing. The systems should not be accorded any protection from interferences by other radio communications services and the Authority investigates complaints of interferences on such systems.

In order to make use of this band, users are only required to purchase radio systems that are type approved and operate within the provisions of the guidelines on the use of the 446 MHz band. Details regarding the said guidelines can be obtained from the Authority during normal working hours.

Low Power Wireless Access Systems in the 2.4 GHz and 5 GHz Frequency bands

This procedure applies to the use of low power devices in the 2.4 GHz and 5 GHz.

Applicants desiring to set up wi-fi systems and hotspots as well as applicants wishing to set up a point-to-point multipoint system within the 5GHz band are required to submit duly completed forms. .

The Authority has issued guidelines specifying detailed technical parameters to be observed and conditions of use of the frequency bands 2.4 GHz and 5 GHz by wireless access systems on shared, non-protected, non-interference basis. These guidelines are available on the the Authority's website www.ca.go.ke.

The procedure for notifying/applying for authorization to use low power wireless access systems in the above frequency bands is as follows:

- The applicant files an application with CCK by duly completing prescribed application forms.
- CCK examines the application and determines if the proposed use and equipment is compliant with the provisions of the guidelines, including the type approval/acceptance status of the proposed radio equipment. For applications which are incomplete and/or do not comply, the applicant is advised accordingly.

If the application is compliant with the said guidelines.

- For applicants desiring to set up low power systems such as Wi-Fi and hotspots in the frequency band, the Authority issues a letter of no objection and the applicants are not required to pay frequency fees.
- For applicants desiring to set up point-to-point or point-to-multipoint systems, the Authority calculates the frequency fee on the basis of the number of terminals as per the charging criteria (annual fee of Kshs10,000.00 per terminal) in the guidelines as well as the requirement to deploy only type approved/ accepted radio equipment.
- Once the applicant makes payment of the fees, an authorization letter allowing the applicant to deploy the specified links in the frequency band under the conditions stipulated in the guidelines.
- The applicant is required to submit returns of network deployment at the end of every financial year so as to have the authorization renewed to facilitate continued use of radio links in the band.

Resolution of Harmful Interference

Interference is the effect of unwanted electromagnetic energy due to one or a combination of emissions or radiations upon reception in a radiocommunication system. Interference is considered harmful when it endangers the functioning of safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunication service.

One of the Authority's main functions in spectrum management is to ensure that different categories of radiocommunication services and/or users operate harmoniously with each other without causing or receiving harmful interference.

The Authority is responsible for resolution of cases of harmful interference whenever they occur. Most of the causes of harmful interference include illegal operation of radio equipment on unauthorized frequencies, failure to adhere to the licensed parameters and use of unapproved and/or faulty radio equipment.

The Authority has equipment to detect, measure characteristics of radio signals and pinpoint the location of the source of the signals that could be causing the interference. In addition, inspections on radio installations are frequently carried out in order to verify that the deployed radio systems are being operated in compliance with the licence parameters.

Procedure for filing an interference complaint

The complainant (licensee or user) lodges an interference complaint with the Authority in writing or by duly completing the Radio Interference Complaints Form. In the event of a verbal complaint by phone or where a complainant visits the Authority's offices. The complainant is required to provide contact details as well as the following information:

- √ Type of devices interfered with
- √ Specific location where interference was experienced
- √ Time and date of interference
- √ Description of interference
- √ Frequency interfered with (if known, i.e. licensees)

Upon receiving information on the reported interference:

- The Authority assesses the information received and, if necessary, contacts the complainant for additional information that may be deemed necessary to assist in the resolution of the interference.
- The Authority analyses the results of the monitoring / measurements / inspection and makes a conclusion as to the cause of the harmful interference.
- The Authority prepares a report of the findings of the monitoring/ inspection and on this basis, writes to the complainant providing an explanation of the results as well as the actions taken or to be taken towards resolution of the harmful interference.
- Where the source of the interference is detected to be originating from a system operated by a licensee, a corrective action is recommended and the offender is contacted and issued with notice of violation stipulating corrective measures to be taken in order to eliminate the interference within the timeframe that the Authority will deem appropriate.

- If the interfering signal is detected to be originating from an unauthorized person (illegal radio installation), the Authority disables and confiscates the radio equipment, and arrests the offender with the help of the law enforcement agencies. In such a case, the Authority gathers sufficient evidence and the offender is subsequently charged in a court of law in accordance with the provisions of the Kenya Information and Communications Act, 1998.

If the interfering signal is detected to be originating from a foreign country, the Authority liaises with the relevant regulatory agency of that country with a view of resolving the interference.





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