

**FREQUENCY SPECTRUM ALLOCATION AND ASSIGNMENT REPORT
FOR THE PERIOD 1ST OCTOBER 2021 TO 31ST DECEMBER 2021**

I. BACKGROUND

1. Radio frequency spectrum is a national and natural resource that is held in trust and managed by the Authority on the behalf of the people of Kenya. The spectrum resource should be managed and utilized effectively and efficiently.
2. While exercising its mandate, the Authority plans, allocates, assigns, issues frequency licenses, monitors, carries out surveillance and coordinates the usage of the radio frequency spectrum resource to ensure optimal and efficient utilization.
3. The Authority has adopted suitable administrative and technical procedures to ensure various radio communication services operate without causing harmful interference and manages the scarce radio spectrum resource in an efficient manner to cater for various radio-communication services.

II. FREQUENCY ASSIGNMENTS AND AUTHORISATIONS

4. To facilitate uptake of radiocommunication services, the Authority assigned frequencies and issued authorisations to licensees for various radiocommunication services during the 2nd Quarter of the 2021/22 financial year as highlighted hereunder:

A. Fixed Links

5. Fixed radio links are telecommunications systems deployed by network facilities providers, broadcasters, public utilities and the emergency services to provide transmission capacity or backhaul for their networks and provide redundancy for other networks.
6. To facilitate provision of communications services, the Authority assigned frequencies for 237 fixed links to various operators for deployment in 2nd Quarter as summarized in table 1 below. The Authority processed the decommissioning of 9 fixed links during the quarter.

Table 1 - Frequencies for fixed links assigned and decommissioned during in the 2nd Quarter

Band	Purpose	End of 2020/21	1 st Quarter		2 nd Quarter	
			New Links	Switched Off	New Links	Switched Off
5 GHz	Non Protected Fixed Links for on Premise Fixed Internet Access	2,121	5	4	5	0
6 GHz		81	0	2	0	0

Band	Purpose	End of 2020/21	1 st Quarter		2 nd Quarter	
			New Links	Switched Off	New Links	Switched Off
7/8 GHz	Backhaul for Mobile Service Base stations	1,604	93	70	90	2
11 GHz	Fixed Point to Multipoint	6	0	4	0	0
13 GHz	Backhaul for Mobile Service Base stations	325	9	14	8	0
15 GHz		2,304	72	150	72	6
18 GHz		72	15	19	15	0
23 GHz		299	27	29	28	0
38 GHz	Backhaul for Mobile Service Base stations	85	4	36	4	0
71/81 GHz		352	12	33	12	1
380 MHz	Broadcasting Studio to Transmitter Links	108	3	2	3	0
Total			240	364	237	9

B. Fixed Wireless Access Service

7. Fixed Wireless Access systems uses radio waves to create a connection between a Point-of-Presence cell tower and an external antenna located at customer's premises. This is primarily use for wireless broadband service provision.
8. The Authority issues frequency assignments to Network Facilities Providers to deploy network infrastructure and provide connectivity to consumers typically within the 1.7, 3.3 and 3.5 GHz bands. The 3.5 GHz band, within which most FWA deployments have been activated in Kenya, will be re-farmed from fixed wireless access to mobile wireless access for 5G.
9. No frequency assignment for fixed wireless access was issued during the quarter.

Table 2 - Summary of Mobile Service Assignments

Category	End of 2020/21	1 st Quarter	2 nd Quarter
1.7 GHz	55	0	0
3.3 GHz	81	0	0
3.5 GHz	107	0	0
Total	243	0	0

C. Mobile Wireless Access Service

10. Mobile Wireless Access networks, or cellular networks, consist of a number of base stations, each serving wireless transmission and reception of digital information in one or several 'cells', where a cell refers to a specific portion of the overall geographical area the network serves. In most deployment cases one base station is serving three cells through strategic antenna configurations and frequency planning.

11. The Authority issues frequency assignments to Network Facilities Providers to deploy network infrastructure and provide connectivity to consumers over 2G, 3G, 4G and soon 5G networks.
12. No additional frequency assignments for mobile wireless access services in the 2nd Quarter of 2021/2022, as was the case during the 1st Quarter.

D. FM Sound Broadcasting Service

13. FM broadcasting is a method of radio broadcasting using frequency modulation (FM) which is used for most broadcasts of music or general audio. The Authority, issues frequency assignment and licenses to broadcasters within the band 87.5 – 108 MHz band.
14. During the 2nd quarter, the Authority assigned 24 FM sound broadcasting frequencies as summarized in the table below:

Table 3 - Summary of FM Sound Broadcasting Assignments

Category	During 2020/21	1st Quarter	2nd Quarter
Commercial	34	10	20
Community	11	2	4
Total	45	12	24

E. Satellite Earth Stations

15. A Satellite Earth station is a terrestrial radio station designed for telecommunication with space stations or reception of radio waves from astronomical radio sources. Earth stations communicate with by transmitting and receiving radio waves in the super high frequency (SHF) or extremely high frequency (EHF) bands. The Authority issues frequency licenses to satellite earth station operators with Hubs in Kenya’s territory.
16. There were no frequency assignments for satellite earth stations in the 2nd Quarter of 2021/2022, as was case during the 1st Quarter when no assignments were issued.

Table 4 - Summary of Satellite Earth Stations Assignments

Category	During 2020/21	1st Quarter	2nd Quarter
Satellite Earth Stations	5	0	0

F. DIGITAL TERESTRIAL TELEVISION BROADCASTING

17. Digital Terrestrial Television broadcasting involves the transmission of television audio-visual signals, using digital encoding, through radio waves from a terrestrial (Earth-based) television transmitter to TV receivers.

18. There were no assignments of frequencies for digital TV broadcasting (DVB-T) in the 2nd Quarter of 2021/2022 financial year. This is similar to the previous quarter where no assignments were issued.

Table 5 - Summary of Digital Terrestrial TV Broadcasting Stations

Category	No. of Licensees	End of 2020/21	1 st Quarter	2 nd Quarter
Broadcast Signal Signal Distributors	2	229	0	0
Self-Provisioning Broadcasters	3	113	0	0
Total	5	342	0	0

G. Private Mobile Radio Service

19. Private Mobile Radio (PMR) is a mobile system that serves a closed user group and that is normally owned and operated by the same organization as its users. PMR is primarily used by business users who need to keep in contact over relatively short distances with a central base station, called a dispatcher. PMR is also widely used by emergency services. PMR networks consist of base stations and a number of mobile terminals and portable or handheld devices.
20. PMR systems generally provide facilities for closed user groups, group call and push-to-talk, and have call set-up times which are generally short compared with mobile cellular systems. Many PMR systems allow Direct Mode Operation in which terminals can communicate with one another directly when they are out of the coverage area of a network.
21. The Authority issued frequency assignment for 7 networks in the Private Mobile Radio service, compared to 13 during the 1st quarter.

Table 3 - Summary of Private Mobile Radio Service Assignments

Category	End of 2020/21	1 st Quarter	2 nd Quarter
Private Mobile Radio Licenses	1222	13	7

H. VHF RADIO ALARM SERVICE

22. A VHF radio alarm system comprises of a transmitter connected to a premise alarm panel, panic button or guard monitoring unit that communicates to a security control room to indicate the status of the system. The alarm activation data is encrypted by the transmitter and sent via VHF frequency to the Decoder at the security control room.
23. The authority assigns spot frequencies for use by security firms that are licensed to operate private mobile radio networks who respond to alarms triggered by their clients. The Authority assigned frequencies for 2 VHF radio alarm networks, compared to 5 during the previous quarter.

Table 7 - Summary of VHF Radio Alarm Radio Service Assignments

Category	End of 2020/21	1st Quarter	2nd Quarter
VHF Radio Alarm Licenses	158	5	3

I. Aeronautical Radio Service

24. Aeronautical radio stations are radio installations aboard aircraft that provide ground to ground and air to ground communication services to aviation operators. The authority manages access to the HF and VHF aeronautical bands by licensing Aircraft stations and other aeronautical radio installations. As per ICAO rules, all aircraft radio stations must be licensed.
25. During the quarter, 63 renewal authorisations for the Aeronautical radio stations were issued compared to 161 during the previous quarter.

Table 8 - Summary of Aeronautical Radio Service Authorisations

Category	End of 2020/21	1st Quarter	2nd Quarter
Aeronautical Radio Stations	715	17	20

J. Amateur Radio Service

26. Amateur radio service uses radio frequency spectrum for purposes of non-commercial exchange of messages, wireless experimentation, self-training, private recreation, contesting, and emergency communication. The Authority licenses radio amateurs categorised as Novice, Temporary and Permanent.
27. Temporary licenses are issued to visiting Hams who have amateur radio operator certificates from countries that reciprocate with Kenya. The full/permanent license is issued to those who have attained qualifications as administered by the Radio Society of Kenya, RSK.
28. During the quarter, 4 new amateur radio service licenses were issued, compared to 1 during the 1st Quarter.

Table 9 -Summary of Amateur Radio Service Authorisations

Category	End of 2020/21	1st Quarter	2nd Quarter
Amateur Radio Service	44	1	4

K. Citizen Band Radio Service

29. Citizens band radio is a land mobile radio service that allows short-distance person-to-person bidirectional voice communication between individuals. Citizens band is distinct from the Amateur Radio Service.
30. No authorisation of the Citizen Band radio service was issued during the quarter.

Table 4 - Summary of Citizen Band Service Authorisations

Category	End of 2020/21	1st Quarter	2nd Quarter
Citizen Band Radio Service	1	0	0

L. Maritime Radio Service

31. A maritime mobile service is a mobile radiocommunication service between coast stations and ship stations, or between ship stations, or between associated on-board communication stations. The service may also be used by survival craft stations (lifeboats) and emergency position-indicating radio beacon stations.
32. Maritime Mobile Service Identity numbers define a series of nine digits transmitted over a radio frequency channel to uniquely identify ship stations, ship earth stations, coast stations and coast earth stations. During the quarter, no Maritime radio service authorisation was issued, compared to 2 during the 1st quarter.

Table 5 - Summary of Maritime Radio Service Authorisations

Category	End of 2020/21	1st Quarter	2nd Quarter
Maritime Radio Service	16	2	0