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GENERAL NOTICE No. 93



MALAWI COMMUNICATIONS REGULATORY AUTHORITY

PUBLICATION OF US\$ 10,000 FINE IMPOSED ON GLOBE INTERNET LIMITED FOR ILLEGAL USAGE OF SPECTRUM CONTRARY TO THE COMMUNICATIONS ACT

The Malawi Communications Regulatory Authority hereby imposes US\$10,000 fine on Globe Internet for illegal usage of spectrum contrary to conditions of usage.

The Authority has confirmed that Globe Internet Limited utilized the 2.3 GHz Spectrum band without authorization from the Authority contrary to section 35 of the Communications Act and operating conditions for radio spectrum licenses.

Globe Internet Limited has been warned before on illegal spectrum usage. According to the operating conditions for terrestrial radio spectrum services the Authority can impose a maximum penalty for illegal spectrum usage of 300% of the actual spectrum fees for the spectrum band in use. The Authority has decided to impose a fine of US\$10,000 on Globe Internet Limited which is a 100% penalty on the total bandwidth utilized within the band.

The Authority hereby publishes the imposition of the fine and the reason for the imposition.

Dated this 31st day of October 2016.

THE DIRECTOR GENERAL

Malawi Communications Regulatory Authority

MACRA House

Salmin Armour Road

Private Bag 261

Blantyre

Malawi

GENERAL NOTICE No. 94



MALAWI COMMUNICATIONS REGULATORY AUTHORITY

SPECTRUM LICENCE FEE SCHEDULE

A. INTRODUCTION

1. This Spectrum licence Fee Schedule is published pursuant to Section 36(1) of the Communications Act 1998 (Cap 68:01 of the Laws of Malawi).
2. Under Section 35(2) of the Communications Act, except where there is an exemption, no person shall operate a radio station in the republic of Malawi without a licence issued by the Malawi Communications Regulatory Authority (the Authority). A radio station includes any equipment, facility or system used or intended to be used for radio-communications.
3. Any person who operates a radio station without a licence issued by the Authority commits an offence under section 98 of the Communications Act and is, upon conviction, liable to a fine or imprisonment.
4. This Schedule describes the categories of radio services the Authority may licence under the Communications Act and the fees payable for such licences.

B. RADIO LICENCE FEES - ADMINISTRATIVE INCENTIVE PRICING

1. This Schedule replaces any prior TERRESTIAL SERVICES (FEES SCHEDULE) published by the Authority.

2. Fee Determination

Effective from 1st September 2016, the radio frequency spectrum licence fees payable for each category of Frequency Spectrum shall be determined by an Administrative Incentive Pricing (AIP) Formula described in this Schedule or by application by the Authority of the minimum fees set in the Schedule.

The Authority reserves the right to indicate where the AIP or the Minimum fee shall not apply. Where the AIP formula or the minimum fees is not applicable, the Authority shall indicate the alternative method to be used for licensing spectrum in a particular spectrum band.

3. AIP Formulae

The following formulae shall apply in determining the radio frequency spectrum licence fees:

(a) Point to Multipoint

This formula shall apply to all point to area services except for special services (e.g. amateur, aeronautical and maritime etc).

$$\text{Frequency Fee} = \text{UNIT} * \text{FREQ} * \text{BW} * \text{CG} * \text{GEO} * \text{SHR} * \text{APOW} * \text{UNIB}$$

The fee shall be determined by the multiplication of the unit price (UNIT), the frequency factor (FREQ), the band width in MHz (BW), the congestion factor (CG), the Geographic factor (GEO), the sharing factor (SHR), the area sterilized factor (APOW) and the unibi-directional factor (UNIB) where this is applicable for point to area.

(b) Point to Point

This formula shall apply to all fixed links transmitting in point to point mode

$$\text{Frequency Fee} = \text{UNIT} * \text{FREQ} * \text{BW} * \text{CG} * \text{GEO} * \text{SHR} * \text{HOPMINI} * \text{UNIB}$$

The fee shall be determined by the multiplication of the unit price (UNIT), the frequency factor (FREQ), the bandwidth (BW) in MHz, the congestion factor (CG), the Geographic factor (GEO), the sharing factor (SHR), the minimum hop length (HOPMINI) and the unibi- directional factor (UNIBI).

(c) VSAT

This formula shall apply to all Earth to Space and Space to Earth Satellite services (eg Vsat terminals).

$$\text{VSAT Fee} = (\text{UNIT} * \text{BW} * \text{MF})$$

The fee for VSAT shall be determined by multiplying the unit price (UNIT), the bandwidth (BW) in MHz and the market factor (MF).

4. Minimum Fee

- (1) The Minimum Fee shall be \$50 for all the services
- (2) The Authority may from time to time revise the minimum fee.
- (3) Where the Radio Frequency Spectrum Licence fee is defined by formula and the result is lower than the minimum fee, then the minimum fee shall apply.

5. Factors and Look up Tables

- (1) Unit Price (UNIT)—the Unit Price shall be applied per MHz of bandwidth. UNIT is \$185 for all services. The Authority may from time to time revise the Unit Price
- (2) Bandwidth (BW)—the bandwidth factor is the assigned frequency spectrum bandwidth expressed in MHz. The Authority shall determine Spectrum bands that may be paired or not in accordance with ITU-R recommendations,
- (3) Frequency factor (FREQ)—the frequency factor denotes the frequency ranges within the usable communication range and relates to the propagation characteristics of the various frequency bands. The frequency factor takes into account the "K" factor and the "sweet spot".

The following are the ranges of the frequency bands and the corresponding frequency factors.

Table of frequency factors

Frequency Range (MHz)		Freq Factors
From	To	
0.083	108.0	1.2
108	174.0	1.1
174	694.0	1.0
694	960.0	1.5
960	2290.0	1.3
2290	4400.0	1.4
4400	7074.0	0.9
7075	9200.0	0.7
9200	10500.0	0.6
10500	17300.0	0.5
17300	25500.0	0.3
25500	39500.0	0.2
39500	100000	0.07

The frequency spectrum bands are segmented in accordance with the Malawi National Frequency Allocation Plan (MNFAP). The Authority reserves the rights to review frequency factor table in line with the MNFAP.

(4) Congestion factor (CG)

CONGESTION	CG FACTOR
Congested	1.0
Not Congested	0.5

The frequency band shall be deemed congested if 75% of the available spectrum is assigned or if there is a waiting list at the particular time of application.

(5) Sharing factor (SHAR)

SHARING	VALUE
Exclusive Use	1.0
Shared Use	0.5

A band shall be deemed shared when the same spectrum portion within a band is assigned to two or more licencees in different geographic locations. A band shall be deemed exclusive when the spectrum portion cannot be assigned to another licencee regardless of geographical location. Sharing shall apply between operators and not between services. The authority shall determine whether a frequency band can be used on an exclusive or shared basis.

(6) Geographic factor (GEO)

The geographic factor defines :-the total coverage area based on the economic activity of the identified area. The zones shall include the following—

- Urban - Blantyre, Lilongwe, Mzuzu and Zomba cities approx 1,000Km².
- Semi urban – District centers of all districts in the Republic of Malawi except, Blantyre, Lilongwe, Mzuzu and Zomba
- Rural areas – any other areas other than urban and semi urban

Geo Area	Geo Factor
Rural	0.3
Semi urban	0.7
Urban	1

In the event of overlapping geographic areas the highest factor shall apply for point to point application,

(7) Unibi-directional factor (UNIBI) - Defines the direction of propagation where bi-directional refers to two way transmission in both directions(transmit and receive) and uni-directional refers to one-way transmission.

UNIBI	Point to Point	Point to Area
Bidirectional	1.0	1.0
Unidirectional	0.7	0.5

(8) HOPMIN - refers to the square root of the minimum path length divided by the actual path length. The HOPMIN is calculated using ITU-R recommendations (REC ITU-R P.530-14 - Propagation data and prediction method)

Frequency Range		Minimum path Length
From	To	Km
8.3Khz	174MHz	100
174MHz	790MHz	60
790MHz	960MHz	50
960MHz	2.29GHz	45
2.29GHz	4.4 GHz	40
4.4GHz	7.075GHz	38
7.075GHz	9.2GHz	30
9.2GHz	10.5 GHz	20
10.5GHz	17.3 GHz	15
17.3GHz	25.5 GHz	7
25.5GHz	39.5 GHz	3

- (9) Aster factor (APOWER) - reflects the area of frequency that is denied to other users as a result of frequency assignment. It shall apply to onm coverage (Point to Area) and mobile services. The APOWER factor shall take into account the total coverage area of Malawi.

Area of Malawi is 118 480km²

Area (Km ²)		Power Factor
From	To	
0	1	0.5
1	10	2
10	50	4
50	500	8
500	5000	22
5000	50000	90
50000	100000	180
100000		300

- (10) Market factor - denotes the type of market where a service is used. The Market factor shall apply to ground components of satellite services.

Ground hub	4.5
Mobile	3
Corporate	2
Private	0.18

6. Spectrum feesreference table

#	SERVICE TYPE	SERVICE SUB CATEGORY	FEE BASIS
1	Broadcasting	SW Sound Broadcasting MW Sound Broadcasting FM Sound Broadcasting VHF/UHF Television	Point to Area Formula Point to Area Formula Point to Area Formula Point to Area Formula
2	Amateur	Amateur Radio Citizen Band	Minimum fee Minimum fee
3	Aeronautical	Aeronautical HF Aeronautical VHF/UHF	Point to point Point to [point

4	Land Mobile Service	VHF/UHF Centralized Radio Alarm System	Point to area
		VHF/UHF PMR Vehicle Mobile Station	Point to area
		VHF/UHF PMR Handheld	Point to area
		VHF/UHF PMR Fixed station	Point to area
		VHF/UHF PMR repeater station	Point to area
		Cellular (GSM/CDMA/3G/4G) Channel Paired	Point to area
5	Maritime	Maritime station	Point to point
6	Satellite	VSAT SOHO	VSAT formula
		VSAT Mobile	VSAT formula
		VSAT cooperate	VSAT formula
		VSAT ground HAB	VSAT formula
7	Fixed	VHF/UHF Radiotelephone Link	Point to Point
		Microwave Radio Link Tx	Point to point
8	ISM	ISM band	Authorization fee

NOTE:

Usage of the ISM bands by any Licensee shall attract an authorization fees of USD 400 annually.

8. Competitive tendering for radio spectrum licences

Notwithstanding the application of the AIP, the Authority may, pursuant to section 38(1) of the Communications Act, issue a public tender or use any other competitive model for the award of a radio licence.

Point to area	VHF/UHF Centralized Radio Alarm System	Point to area
Point to area	VHF/UHF PMR Vehicle Mobile Station	Point to area
Point to area	VHF/UHF PMR Handheld	Point to area
Point to area	VHF/UHF PMR Fixed station	Point to area
Point to area	VHF/UHF PMR repeater station	Point to area
Point to area	Cellular (GSM/CDMA/3G/4G) Channel Paired	Point to area
Point to point	Maritime station	Point to point
VSAT formula	VSAT SOHO	VSAT formula
VSAT formula	VSAT Mobile	VSAT formula
VSAT formula	VSAT cooperate	VSAT formula
VSAT formula	VSAT ground HAB	VSAT formula
Point to Point	VHF/UHF Radiotelephone Link	Point to Point
Point to point	Microwave Radio Link Tx	Point to point
Authorization fee	ISM band	Authorization fee

C. TERMS AND CONDITIONS APPLICABLE TO ALL RADIO LICENCES

1. These terms and conditions shall apply to all radio licences.
2. Authority shall assign spectrum upon full payment of the applicable radio (spectrum) licence fees by the licensee.
3. The radio(spectrum) licence fees shall be non-refundable once the spectrum has been assigned.
4. Unless otherwise indicated by the Authority, a radio (spectrum) licence shall be valid for a period of one (1) year.
5. A Licensee shall apply in writing for renewal of its radio (radio) licence one month before the expiry of the licence.
6. Renewal of a radio (spectrum) licence shall be subject to a technical verification by the Authority of appropriate spectrum utilization by the Licensee during the licence period.
7. The Authority may revoke a radio (spectrum) licence if the licensee does not put the assigned spectrum to use within six (6) months from the date of assignment or within such period as the Authority may prescribe.
8. The Authority may refuse the renewal of a radio (spectrum) licence if the licensee is in breach of any licence term or condition.
9. The Authority may from time to time revise the radio frequency spectrum fees.
10. A radio licence issued by the Authority shall confer on the Licensee rights of use and not proprietary rights and the Authority may re-allocate or re-assign the frequencies in line with International Radio-communications Regulations and applicable national regulations.
10. A Licensee shall not use any frequencies other than those assigned by the Authority.
11. The Authority shall in addition to any other appropriate regulatory sanctions under the Act or appropriate Regulations, require any licensee found guilty of illegal usage of radio frequency spectrum to pay a monetary penalty of up to 300% of the normal annual applicable fees.

D. DEFINITIONS

- Aster factor (Power Factor)** Is a coefficient factor set in the spectrum fee formula to reflect the electromagnetic pollution into the environment in the use of the frequency assigned to the licensee.
- Bandwidth factor** Is a coefficient factor set in the spectrum fee formula to reflect the bandwidth assigned.
- Congestion factor** Is a coefficient factor set in the spectrum fee formula to reflect the demand for the spectrum both in a given geographical area and in a spectrum band. Where assignment exceeds 75% of the available spectrum in the band, the band is considered congested.
- Frequency Band Factor (FREQ)** Is a coefficient factor set in the spectrum fee formula to reflect the physical properties of frequency bands or a specific frequency covered in the National Frequency Allocation Plan.
- Geographical Factor (GEO)** Is a coefficient factor set in spectrum fee formula to reflect economic activity differences in the geographical area of Malawi i.e. urban, semi-urban and rural areas.
- HopMin Factor** A coefficient factor set in the spectrum fee formula that is applied to point to point frequency spectrum assignment where the recommended hop length is compared to the actual hop length deployed for a particular microwave link.
- The 'K' factor** Is the difference between the theoretical propagation paths and actual radio paths under line of sight propagation as influenced by the curvature of the earth.
- Market Factor (MF)**- a coefficient factor set to differentiate between the different VSat applications in the market.
- Minimum Price** Is the lowest fee set by the Regulator to be paid by the licensee for a radio frequency spectrum.
- Sharing Factor** Is a coefficient factor set in the spectrum fee formula that is applied to reflect the exclusivity or sole usage of frequency spectrum depicting whether the spectrum can be shared or not.
- Spectrum Auctions** Is a method for assigning spectrum at the time of its first issue by the spectrum regulator to those who value the spectrum most highly. This is done where demand of spectrum is higher than supply of the same. The highest bidder is awarded the license.
- Spectrum Frequency Fees** Is the amount of money charged to spectrum users or licensees in return for renting spectrum as a resource.
- Uni-directional Factor** Is a coefficient factor set in the spectrum fee formula that is applied when only a single link is assigned.
- Unit Price** This is the price that is applied in the spectrum fee formula when the radio frequency spectrum license fee is calculated. The Unit Price is a multiplier in the formulae.