ESWATINI COMMUNICATIONS COMMISSION

Spectrum Fee Schedule 2024

The Eswatini Communications Commission ('the Commission') hereby publishes a revised Spectrum Fee Schedule, in terms of section 17 of the Electronic Communications (Radio Communications and Frequency Spectrum Regulations 2016) ('the Spectrum Regulations') which thereby, with effect from 1st April 2024 repeals the spectrum fee schedule 2021 for radio frequency spectrum license fees.

1. Definitions

In this Schedule, unless the context otherwise requires –

$$_{UL}$$	means the minimum fee for satellite uplink connections
$$_{CPE}$$	The current minimum fee for non- hub satellite ground station uplink connections
Act	means the Electronic Communications Act, 2013
AF	means Area Factor
Area Factor	means a factor that is applied to reflect an area that is denied to other users of a frequency assignment
Amateur	means a person who is interested in the radio technique solely for a private reason and not for financial gain and to whom the Commission has granted an amateur radio station licence and shall mean a natural person and shall not include a juristic person or an association: provided that an amateur radio station licence may be issued to a licensed radio amateur acting on behalf of a duly founded amateur radio association
Assignment	means the authorisation given by the Commission to a licensee to use a radio frequency or radio frequency channel under specified conditions
BW_{UL}	means the uplink bandwidth in MHz
BW	means Bandwidth Factor
Bandwidth Factor	means the total unpaired bandwidth assigned to a licensee in MHz
Discount Factor (DF)	Means a factor used to discount the price for satellite CPE terminals calculated based on the number of licensed or installed devices.
EHF	means Extremely High Frequency
FDD	means Frequency Division Duplex
FREQ-F	means Frequency band Factor for fixed services
FREQ-M	means Frequency band Factor for Mobile services
Frequency band Factor	means a factor that is based on the propagation characteristics of the frequency locations meaning that higher frequencies cost less than lower frequencies.
GHz	means Gigahertz of Radio Frequency Spectrum;
HD	means High Demand factor

High Demand Factor	means factor set by the commission for spectrum that is considered to be in high demand, which may include spectrum subject to congestion
HOPMINI	means minimum hop length factor
Minimum Hop Length Factor	means factor which will be applied to point to point links and penalises licensees who make undue use of low frequency bands for links with relatively short hop lengths
kHz	means Kilohertz of radio frequency spectrum
Land mobile service	means a mobile radio-communication service between fixed stations and mobile land stations, or between land mobile stations
LF	means Low Frequency
LMR	means Land Mobile Radio
MHz	means Megahertz of radio frequency spectrum;
Minimum Fee	means the minimum fee paid for a radio frequency spectrum licence
PMR	means private mobile radio
PtM	means Point to Multipoint
PtP	means Point to Point
SHF	means Super High Frequency
SHR	means Sharing Factor
Sharing Factor	means factor that affords a discount for the sharing of spectrum
TDD	means Time Division Duplex
UNIT	means unit price
UHF	means Ultra High Frequency
UL	Uplink
VHF	means Very High Frequency
VLF	Very Low Frequency
VSAT	means Very Small Aperture Terminal and is a two-way satellite ground station that is smaller than 3 metres in diameter

2. Intentions of the Commission

(a) The intention of the Commission is to publish a revised system of spectrum fees that are in line with the Spectrum Regulations and meet the following criteria:

i. Promote efficient use of spectrum.

ii. Prevent stockpiling of spectrum.

iii. Provide incentives to move to less congested spectrum.

iv. Provide incentives to hand back spectrum that is not needed.

v. Encourage users to switch to spectrally efficient technologies.

vi. Reflects the relative economic value of spectrum.

vii. Be forward looking, technologically neutral and sustainable.

viii. Be user friendly and easy to implement.

ix. Be flexible and be tuneable to meet alternative spectrum fee revenue objectives.

x. Stimulate economic growth.

xi. Be appropriate for Eswatini conditions and ESCCOM resources.

xii. The new Spectrum pricing formula and Spectrum fee schedule seeks to emphasize the importance of the efficient use of Spectrum, by the following:

a. Ensuring that Spectrum users who employ initiatives to efficiently use Spectrum assigned to them get more value from the spectrum fees.

b. Penalizing Spectrum users who use Spectrum inefficiently.

xiii. Furthermore, this new pricing framework:

a. Considers the developments in the Satellite service where there is the Non GSO networks which have increased in number of installations requiring or accommodating the blanket licensing of Satellite terminals.

b. Consider the actual coverage of Land Mobile service networks in the formulation of the Spectrum pricing.

3. Pricing Approach

(a) The Commission shall adopt a pricing formula that reflects the relative economic value of radio frequency spectrum in order to:

i. encourage the efficient usage of radio frequency spectrum and stimulate growth.

ii. Discourage hoarding of Spectrum

iii. To provide transparency in Spectrum pricing

(b) The price of radio frequency spectrum shall be directly proportional to the size of radio frequency spectrum assigned.

(c) The price of radio frequency spectrum shall vary depending on the frequency band.

(d) The price of the radio frequency spectrum may also reflect all or some of the following factors:

i. the area sterilized (denied to other users),

ii. the propagation characteristics,

iii. whether the band in question is determined to be in high demand or not,

iv. the degree of sharing and the minimum hop length of an assignment of a single link.

(e) The fees payable for radio frequency spectrum shall be at least sufficient to cover the costs of radio frequency spectrum management and monitoring.

4. Application Fees

(a) The standard application fees are provided in Annexure A.

(b) Application Fees for cellular bands and any other bands identified by the Commission will be specified in an invitation to apply or otherwise separately.

5. Annual Fee Determination

(a) The annual fees payable for each category of radio frequency spectrum shall either be determined by a pricing formula as described in this Schedule or by application of the minimum fee.

(b) The unit price per MHz of frequency spectrum is as stated in Annexure B to this Schedule and may be reviewed from time to time by the Commission.

6. Exceptions

(a) Equipment that is license exempt as determined by the Spectrum Regulations is not subject to a radio frequency spectrum license fee.

(b) For short duration licenses, the spectrum fees shall be prorated based on the license period.

7. Formulae

The following formulae shall be used:

(a) Point-to-area formula

Applied to all point to area services except for amateur and aeronautical with exclusive band assignments.

Fee = (UNIT * FREQ-M * BW * HD * SHR * AF)

The fee is the multiplication of the unit price (UNIT) by the frequency factor (FREQ-M), the bandwidth (BW) in MHz, the high demand factor (HD), the sharing factor (SHR) and the area factor (AF).

(b) Point-to-point formula

Applied to all fixed links whether below or above 1GHz. The formula is as follows:

Fee = (UNIT * FREQ-F * BW *HD * SHR * HOPMINI)

The fee is the multiplication of the unit price (UNIT) by the frequency factor (FREQ-F), the bandwidth factor (BW) in MHz, the high demand factor (HD), the sharing factor (SHR) and the minimum hop length (HOPMINI).

(c) Hub Ground Station Satellite Formula

The fee for a principal hub station for uplink is determined by the following fee:

Hub ground station Fee = Max ($UL; UNIT * BWUL)

The fee is either the multiplication of the unit price (UNIT) by the uplink bandwidth (BW_{UL}) in MHz or $\$_{UL}$, the minimum fee for satellite uplink connections, depending on which yields the largest value.

(d) Non-hub VSAT Ground Station Satellite Formula

The fee for a non-hub Very Small Aperture Station for uplink is determined by the following fee:

Non-hub VSAT Fee = Number of Terminals * DF * Max ($\$_{CPE}$; UNIT * BW_{UL})

The fee is either the multiplication of the unit price (UNIT) by the uplink bandwidth (BW_{UL}) in MHz or $\$_{CPE}$, the minimum fee for non-Hub VSAT stations, as determined by the Commission, depending on which yields the largest value.

8. Factors and Look-up Tables

(a) Unit Price (UNIT) – UNIT is applied per MHz of bandwidth. The value of UNIT is provided in Annexure B.

(b) Bandwidth (BW) – BW is expressed as the total unpaired bandwidth assigned to a licensee in MHz.

(c) Frequency factor (FREQ-F) - The FREQ-F values associated with various frequency ranges are as follows:

Frequency Band	Centre Frequency	FREQ-F Factor
VLF	3-30 kHz	1.2
LF	30-300 kHz	1
MF	0.3-3 MHz	0.87
HF	3 - 30 MHz	0.7
VHF	30 - 300 MHz	0.54
UHF	0.3 - 1 GHz	0.38
UHF	1 - 3 GHz	0.29
SHF	3 - 8 GHz	0.21
SHF	8 - 30 GHz	0.14
EHF	above 30 GHz	0.05

(d) Frequency factor (FREQ-M) - The FREQ-M values associated with various frequency ranges are as follows:

Frequency Band	Centre Frequency	FREQ-M Factor
VLF	3-30 kHz	1.2
LF	30-300 kHz	1
MF	0.3-3 MHz	0.87
HF	3 - 30 MHz	0.7
VHF	30 - 300 MHz	0.54
UHF	0.3 - 1 GHz	0.38
UHF	1 - 3 GHz	0.29
SHF	3 - 5 GHz	0.084
SHF	5 - 30 GHz	0.042
EHF	30 - 60 GHz	0.032
EHF	above 60 GHz	0.01

(e) High Demand Factor (HD) – The HD values are as follows:

HIGH DEMAND	HD
High Demand	2
Not in High Demand	1

i. The High Demand frequency bands will be determined by the Commission.

(f) Sharing Factor (SHR) – The SHR values associated with the various degrees of sharing are as follows:

Sharing	**Value of sharing factor**
Exclusive	1
Shared	0.5

i. Sharing is considered to exist in instances where two or more licensees share a common frequency assignment within a common geographical area.

(g) Area Factor (AF) - The following table shows the various values of AF:

Area (sq km)	**AF**
0-1	0.6
1-10	1.8
10-100	5.6
100-1000	17.8
1000-5000	39.9
5000-10,000	56.4
10,000 above	73.6

(h) Discount Factor (DF) - The following table shows the various values for DF

Number of equipment/terminals (Y)	**Discount factor**
1 to 50	1 (no discount)
51 to 200	0.96
201 to 500	0.92
Above 500	0.88

(i) Minimum hop length (HOPMINI) - The following table shows the minimum path lengths by frequency. Frequencies not appearing specifically in this table shall be rounded to the next highest value in the table.

Frequency Band	Min Path Length (Km)
400 MHz	100
800 MHz	60
1.4/1.6/2 GHz	30
4 and 5 GHz	16
7.5 GHz	14
10 and 11 GHz	10
13/14/15 GHz	9
17/18 GHz	4
22/23 GHz	3
25/26 GHz	3
28 GHz	2
31 and 32 GHz	1.5
38 GHz	1
Higher	0

(i) Where the actual path length of the licensee's link is shorter than the minimum path length for the frequency, the HOPMINI factor in the formula shall be calculated as the square root of the ratio between the minimum path length for the frequency requested and the actual path length of the licensee's link.

$$\text{HOPMINI} = \sqrt{\frac{Minimum\ Path\ Length\ for\ the\ Frequency}{Actual\ Path\ Length}}$$

(ii) Where the actual path length is equal to the minimum path length for frequency spectrum, the value of HOPMINI in the formula will be 1.

9. Minimum Fees

(a) The Minimum Fees are as stated in the Annexure B.

(b) The Minimum fees are applicable to the services as defined in Annexure A.

(c) Where the radio frequency spectrum license fee computed by the relevant formula is lower than the minimum fee, then the minimum fee shall apply.

(d) For satellite hub uplink stations, the minimum fee for satellite hub uplink stations shall apply.

Annexure A SPECTRUM LICENSE FEES SUMMARY

Description			
		Application Fee	*Formula*
1	**Land Mobile Services (non-cellular)**		
1.1	Mobile two-way radio stations	SZL 1,000.00	Point to Area formula
1.2	Cross Border	SZL 1,000.00	Point to Area formula (land area within Swaziland)
1.3	Alarm system including base station with remote stations	SZL 1,000.00	Point to Area formula
1.4	Paging systems	SZL 1,000.00	Point to Area formula
2	**Satellite Services**		
2.1	Earth station/ VSATs -Transmit/ Receive (TX/RX) – Corporate	SZL 1,000.00	Satellite or VSAT formula
2.2	Earth Station / VSATs – Transmit/Receive – Solar and Heliospheric Observatory (SOHO)	SZL 1,000.00	Satellite or VSAT formula
2.3	Amateur	Nil	Minimum Price
2.4	Terminal for radio determination services	SZL 1,000.00	Point to Area formula
2.5	Landing rights:	SZL 1,000.00	Point to Area formula
3	**Radio-determination / Aeronautical Services**		
3.1	Aeronautical stations (per airport)	SZL 1,000.00	Minimum Price
3.2	Aircraft Licence (per aircraft)	SZL 1,000.0	Minimum Price
3.3	Radio - operators Certificate	Nil	Nil
3.4	Aeronautical earth station	SZL 1,000.0	Minimum Price
3.5	Radiolocation stations e.g. Radar	SZL 1,000.0	Minimum Price
4	**Fixed services**		
4.1	Point to Point Link	SZL 1,000.00	Point to Point formula
4.2	Point to Multi-Point Link	SZL 1,000.00	Point to Area formula
4.3	Amateur Radio	Nil	Minimum Price
5	**Telemetry / Tele-command: e.g. radio equipment for measuring seismic movements**	**SZL 1000.00**	Point to Area formula
6	**Broadcasting Services**		
6.1	Sound		
6.1.1	MF-AM	SZL 1,000.00	Point to Area formula
6.1.2	HF-AM	SZL 1,000.00	Point to Area formula
6.1.3	VHF-FM	SZL 1,000.00	Point to Area formula
6.2	Television		
6.2.1	VHF	SZL 1,000.00	Point to Area formula
6.2.2	UHF	SZL 1,000.00	Point to Area formula
7	**Land Mobile Services (Cellular)**	Application Fees will be specified in the invitation to apply.	Point to Area (max AF) and max HD Factor

Annexure B

A The Unit Price per MHz paired is as follows:

2024/2025	SZL 2164
2025/2026	SZL 2164
2026/2027	SZL 2164

B The Minimum Fee for Amateur is SZL 148

C The Minimum Fee is SZL 500

D The Minimum fee for a Satellite Hub Station is SZL 15,000

E The Minimum fee for non-Hub VSAT stations, is SZL 1,440

F The HOPMINI Factor will be calculated based on link hops and frequency bands.

G The High Demand Factor of 2 is applied to Land Mobile Cellular Services.