
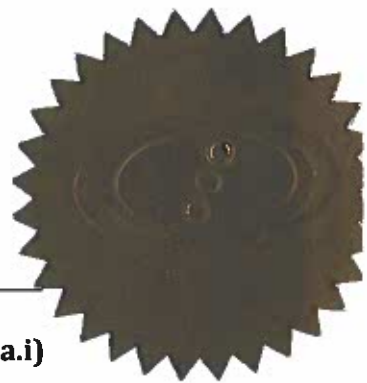




L E S O T H O COMMUNICATIONS AUTHORITY
NETWORK SERVICES LICENCE

Issued In Terms of The Communications Act 2012

NAME OF LICENSEE	<i>JENNY LESOTHO (PTY) LTD (REGISTRATION NO. 76260)</i>
LICENCE NUMBER	<i>LSO/2022/TL01/2</i>
LICENSED SERVICES	<i>PROVISION OF INTERNET ACCESS AND INTERNET BASED SERVICES</i>
LICENSED SYSTEMS	<i>FIXED WIRELESS NETWORK</i>
AREA	<i>NATIONALLY</i>
ISM BANDS	<i>TX: 2400-2483.5 MHz, 5725-5875 MHz, RX: 2400-2483.5 MHz, 5725-5875 MHz</i>
POWER	<i>1.00000 WATTS</i>
PLACE OF BUSINESS	<i>AVANI LESOTHO, OFFICE NO. 247, HILTON ROAD, MASERU</i>
POSTAL ADDRESS	<i>P.O. BOX 18 QUTHING</i>
LICENCE VALID FROM	<i>12/04/2022</i>
UNTIL	<i>11/04/2042</i>
SIGNED	 N. GOOLAM CHIEF EXECUTIVE OFFICER (a.i)



THIS LICENCE IS SUBJECT TO :

1. The Communications Act 2012 and its subsidiary legislation.
2. Licence Conditions.

A NETWORK SERVICES LICENCE

GRANTED

BY

THE LESOTHO COMMUNICATIONS AUTHORITY

TO

JENNY LESOTHO (PTY) LTD

(REGISTRATION NO. 76260)

(Licensee)

In terms of Section 5(1) (d) of the Act

FOR THE OPERATION OF FIXED WIRELESS NETWORK

AND

PROVISION OF WIRELESS INTERNET SERVICES

Licence Number: LSO/2022/TL01/2

Approved on: 10 March 2022

Commencement Date: 12 April 2022

Expiry Date: 11 April 2042



N. GOOLAM
CHIEF EXECUTIVE OFFICER (a.i)
LESOTHO COMMUNICATIONS AUTHORITY

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THE LICENCE

TERMS

1. The Lesotho Communications Authority (the “Authority”), in accordance with section 5(1) (d) of the Communications Act, 2012 (the “Act”), hereby authorizes **JENNY LESOTHO (Pty) Ltd** to operate a fixed wireless network described herein as (the “**Licensed System**”), to provide services described herein as (the “**Licensed Services**”) and to connect the Licensed Systems to telecommunication systems within and outside Lesotho in accordance with the Conditions set out hereunder.
2. The Licensed System is a fixed wireless network located within the Kingdom of Lesotho and connected to such international networks as it may be necessary to provide licensed services.

The Licensed Services are:

- a) Provision of internet access; and
 - b) Any internet-based service
3. The Licensee is authorized to connect the Licensed Systems to:
 - a) Any other telecommunication system run under a Licence granted by the Authority in accordance with the Act;
 - b) Any telecommunication apparatus, which is approved for connection by the Authority; and
 - c) Any telecommunication system authorized to operate in international commerce by any other nation, country or territory, and which operates pursuant to international telecommunications standards.
 4. The licensee shall provide services in accordance with the conditions stipulated in the Regulatory Guidelines for use of ISM Bands for Commercial Services in Lesotho attached herein as **Annexure 1**.

5. This Licence:
 - a) Is issued for a period of **20 years** with effect from **12 April 2022** (the “Licence term”); and
 - b) Shall come into operation within 24 months of issue of this Licence, unless it is revoked earlier in accordance with the conditions set out below.
6. Notwithstanding clause (5) of these terms, the Authority may at any time revoke this Licence by giving thirty (30) days’ notice in writing in any of the following circumstances:
 - a) If the Licensee agrees in writing with the Authority that this Licence should be revoked;
 - b) If any amount payable to the Authority is unpaid thirty (30) days after the Authority has notified the Licensee that the payment was overdue, provided that such notification shall not have been given earlier than seven (7) days after the date on which the payment was due;
 - c) If the Licensee fails to commence operations within the period stated in Clause 5 (b) above;
 - d) If the Licensee is dissolved or enters into liquidation, bankruptcy or equivalent proceedings or makes a general assignment for the benefit of creditors; or
 - e) If the Licensee contravenes these Licence Conditions, the Act, Rules, Regulations or any directive issued by the Authority.
7. After the end of the initial notice period, the Authority shall publish a notice stating that it intends to revoke this Licence and setting out the reasons on which this intention is based. Revocation shall take effect seven (7) days following publication of the notice.

8. The Authority may renew this Licence, upon application by the Licensee, for an additional period following the expiry of the Licence Term, provided that the Licensee has fulfilled its obligations set out in this Licence and provided further that the Authority has carried out a formal review to determine whether it is in the public interest that the Licence should be renewed.
9. The Licensee shall submit an application for renewal to the Authority not less than two (2) years prior to the expiry of the Licence.
10. This Licence shall be held subject to the Terms and Conditions set out herein, provisions of the Act, Rules and Regulations adopted pursuant to the Act.
11. The Licensee shall not assign, delegate, transfer or encumber in any manner the rights, interests or obligations under this Licence without the prior, express and written consent of the Authority.
12. Any word, phrase or expression used in this Licence shall have the same meaning as it has in the Act. Unless the context otherwise requires, the following terms shall have the following meanings:

“**Act**” means the Communications Act No. 4 of 2012;

“**Authority**” means the Lesotho Communications Authority established pursuant to the Act;

“**Rules**” means any regulations established by the Authority from time to time in accordance with the Act;

“**Resale services**” means communication services purchased from the Licensee and made available to the end user;

“**Universal Service Fund**” means a fund for provision and availability of essential information and communications technologies (ICT) services to all sections of society as determined by the Authority and/or Universal Service Fund Committee;

“**Licensee**” means a person who has been granted a licence by the Authority for provision of communications services;

“Maintenance services” means carrying out repairs and ensuring that communications systems and facilities perform in accordance with manufacturers’ specifications or with international standards.

CONDITIONS

1 PROVISION OF SERVICES FOR RESALE

- 1.1 The Licensee shall be required to negotiate in good faith with persons making bona fide requests to purchase Licensed Services for resale and enter into an agreement within 30 days. The agreement shall include reasonable terms and conditions, including those relating to charges.
- 1.2 The obligation in Condition 1.1 above shall not apply in the event that, it is not, in the Authority’s view, reasonable to require the Licensee to enter into such an agreement in the particular circumstances, including, but not limited to circumstances:
 - 1.2.1 Beyond the Licensee’s control;
 - 1.2.2 Where the provision of the service would expose any person engaged in its provision to undue risk to health or safety; or
 - 1.2.3 Where it is not reasonably practicable.

2 SERVICE PROVISION BY OTHER PARTIES

- 2.1 The Licensee shall permit any licensed telecommunication operator to connect its telecommunication system to the Licensee’s Systems so as to enable the provision of such operator’s licensed services.
- 2.2 The obligation in Condition 2.1 above shall not apply in the event that it is not, in the Authority’s view, reasonable to require the Licensee to provide the service requested by means of the Licensed Systems in the particular circumstances, including, but not limited to circumstances:
 - 2.2.1 Beyond the Licensee’s control;

2.2.2 Where the provision of the service would have adverse effects to the Licensee's systems or expose any person engaged in its provision to undue risk to health or safety; or

2.2.3 Where it is not reasonably practicable.

3 PROVISION OF CUSTOMER INFORMATION SERVICES

3.1 The Licensee shall establish and maintain efficient information services to assist any person to whom it provides Licensed Services to answer questions regarding connection, charges, and any other questions relating to the Licensed Services.

3.2 The obligation in Condition 3.1 above shall not apply in the event that, it is not, in the Authority's view, reasonable to require the Licensee to comply with such an obligation in particular circumstances, including, but not limited to circumstances:

3.2.1 Beyond the Licensee's control;

3.2.2 Where the provision of the service would expose any person engaged in its provision to undue risk to health or safety; or

3.2.3 Where it is not reasonably practicable.

4 PROVISION OF MAINTENANCE SERVICES

4.1 The Licensee shall provide or ensure the provision of maintenance services, on the reasonable request of any person to whom it provides Licensed Services, in respect of any Licensed System or any approved apparatus, which is under that person's control.

4.2 The obligation in Condition 4.1 above shall not apply in the event that it is not, in the Authority's view, reasonable to require the Licensee to provide the service requested by means of the Licensed Systems in the particular circumstances, including, but not limited to circumstances:

4.2.1 Beyond the Licensee's control;

4.2.2 Where the provision of the service would expose any person engaged in its provision to undue risk of health or safety;

4.2.3 Where the Licensed System or apparatus is beyond economic repair or its components are no longer available; or

4.2.4 Where it is not reasonably practicable.

5 INTERRUPTIONS OF THE LICENSED SERVICES

5.1 Subject to Conditions 5.2 and 5.3 below, the Licensee shall not intentionally interrupt the operation of the Licensed Systems or any part thereof, in the normal course of business, nor may it in the normal course of business suspend the provision of any type of Licensed Service without having first notified the Authority in writing and having provided notice to affected end-users seven days before such interruption or suspension.

5.2 The provision in Condition 5.1 above shall not apply if, in the Authority's view, the interruption or suspension is due to an emergency, national security, or circumstances beyond the Licensee's control.

5.3 The provision in Condition 5.1 above shall not apply if, in the Authority's view, the interruption or suspension of a Licensed Service supplied by the Licensee is to a person whose system is endangering the integrity of the Licensed Systems.

5.4 The Licensee may interrupt or suspend the provision of the Licensed Service to any Customer if the Customer fails to comply with the terms and conditions of the service agreement between the Licensee and the Customer.

5.5 In case of unplanned network outage or fault, the Licensee shall provide immediate notice to the end-users through SMS or any other communications mode and shall also provide a written notice to the Authority within 48Hrs of the occurrence of the outage.

6 PUBLIC EMERGENCIES

- 6.1 In the case of an emergency or local, regional or national crisis such as earthquakes, floods, riots, or similar events which require special attention on the part of the Licensee, the Licensee shall provide the necessary services to the Government, giving priority to the activities required to overcome the emergency.
- 6.2 In case of an emergency or crisis being related to aspects of national security, the Licensee shall co-ordinate with the Commissioner of Police who shall make any request in writing and provide the necessary services in accordance with the instructions of the Authority or the competent entity indicated thereby in accordance with the relevant laws.
- 6.3 The Licensee shall be entitled to reimbursement by the Government of its direct costs for the provision of the services mentioned in Conditions [6.1] and [6.2] above if such costs are reasonable and are, to the satisfaction of the Authority, shown to have been incurred.

7 CHARGES

- 7.1 Charges made to any person and conditions for the provision of licensed Services shall be publicised by the licensee.
- 7.2 The Licensed Services shall be provided on standard terms and conditions, which must include provision for an effective dispute resolution mechanism, to any person on request.
- 7.3 The Licensee shall file proposed charges, terms and conditions for provision of licensed services to the Authority prior to inception of business.
- 7.4 The Licensee shall file, whenever it makes changes to its rates, the charges and the terms and conditions upon which it proposes to offer the Licensed Services. Changes shall be filed at least thirty (30) days prior to the date of effectiveness.

8 QUALITY OF SERVICE REQUIREMENTS

- 8.1 The Licensee shall meet the quality of service standards as may be prescribed under the Rules from time to time issued by the Authority.
- 8.2 The Licensee shall ensure that it maintains information records for the purpose of satisfying the Authority that the Licensee is meeting the Quality of Service requirements.

9 BILLING ACCURACY

- 9.1 The Licensee shall, prior to inception of business, submit its proposed billing system to the Authority. The billing system shall capture true and correct customer charges.
- 9.2 The Licensee shall not render any bill in respect of any Licensed Service unless every amount stated in the bill is derived in accordance with the billing system.
- 9.3 The Licensee shall on request provide each of its Customers, at no additional cost, with an itemized bill which shall contain, amongst other details, billing period, the name, address, telephone number, account number, date and time of connection for data session, duration and volume of data session and total charge for each data session and any billing information that will ensure satisfaction of the Customer.
- 9.4 The Licensee shall keep such records of customer accounts for the purpose of satisfying the Authority that the billing system is accurate. The Licensee shall retain the records for at least three (3) years from the date on which they came into being.
- 9.5 In order for the Authority to be satisfied that the billing system is accurate, the Authority (or an independent auditor appointed by the Authority at its own discretion) may require the Licensee to:
 - 9.5.1 Furnish the Authority with any information it requires;

- 9.5.2 On reasonable notice, allow the Authority (or any person authorized by the Authority) access to any relevant premises of the Licensee; or
- 9.5.3 On reasonable notice, allow the Authority (or any person authorized by the Authority) to examine or test the whole or any part of the billing process.

10 CUSTOMER SERVICE STANDARDS

- 10.1 The Licensee shall develop, publish and file with the Authority guidelines for use by its personnel for handling enquiries and complaints from customers to whom it supplies licensed services. The customer service standards shall include the timeframe for handling complaints.
- 10.2 The guidelines relating to enquiries and complaints shall be published and be made available to customers at the commencement of service to such customers in both official languages of Lesotho.
- 10.3 The Licensee shall keep and maintain statistics on enquiries and complaints made to the Licensee's network services and shall submit such information to the Authority annually or as may be required by the Authority.

11 PEERING

- 11.1 The Licensee may enter into peering agreements with similarly licensed service providers both in Lesotho and internationally.
- 11.2 The Licensee shall advise the Authority on any peering agreements it has entered into.

12 PRIVACY AND CONFIDENTIALITY

- 11.1 The Licensee shall use all reasonable endeavours to ensure the privacy and confidentiality of information and business secrets obtained in the course of its business from any person to whom it

provides Licensed Services and any person with whom it has a peering agreement.

- 12.2 The Licensee shall not use or allow use of any apparatus which is capable of recording, silently monitoring, or intruding into transmission of any messages unless the licensee complies with Condition [12.3] below.
- 12.3 The Licensee may deviate from provisions of Conditions [12.1 and 12.2] only to comply with a court order. The Licensee shall maintain a record of all requests and court orders indicating how they were implemented. The Licensee shall furnish to the Authority such information on request.

13 FAIR COMPETITION

- 13.1 Without prejudice to other obligations imposed on the Licensee under this Licence, the Licensee shall not engage in any activities, whether by act or omission, which have, or are intended to or likely to have, the effect of unfairly preventing, restricting or distorting competition in relation to any business activity relating to the Licensed Services. Without limiting the generality of the foregoing, any such act or omission shall include:
 - 13.1.1 Any activity by the Licensee, either independently or with others, which unfairly excludes or limits competition between the Licensee and any other party;
 - 13.1.2 Entering into any contract or engaging in any concerted practice with any other party, which unfairly prevents, restricts or distorts competition; or
 - 13.1.3 Effecting anti-competitive changes in the market structure, and in particular anti-competitive mergers and acquisitions.

14 PROHIBITION OF UNDUE DISCRIMINATION

- 14.1 Without prejudice to the obligations imposed on the Licensee under this Licence, the Licensee shall not (whether in respect of the rates or other terms and conditions applied or otherwise) show undue preference to, or exercise undue discrimination against particular persons or persons of any class or description regarding the provision of the Licensed Services.
- 14.2 The Licensee may be deemed to have shown undue discrimination if it unfairly favours to a material extent a business carried on by it in relation to the provision of the Licensed Services so as to place at a significant competitive disadvantage persons competing with that business.
- 14.3 The Authority shall determine any question relating to whether any act done or course of conduct by the Licensee amounts to undue preference or undue discrimination.

15 ACCOUNTING REQUIREMENTS

- 15.1 The Licensee shall adopt an accounting system that allows the licensee to keep records in accordance with International Accounting Standards.
- 15.2 Within ninety (90) days of the end of the Licensee's financial year, the Licensee shall submit to the Authority its balance sheet, profit and loss statements, cash flows and other related statements as of the end of such financial year. The submission shall include certification by independent auditors stating that such financial statements fairly present the financial position of the Licensee as at the dates indicated and were prepared in accordance with International Accounting Standards.
- 15.3 The Authority may request the Licensee to submit other accounting information it may require in order to effectively supervise and enforce the terms of this Licence.

16 REQUIREMENT TO PROVIDE INFORMATION

- 16.1 The Licensee is required to maintain such information as will enable the Authority to carry out its functions under the Act. The Licensee shall submit to the Authority such periodic reports, statistics, statement of operations and any other information, as the Authority may from time to time request, and the Licensee shall provide such information.
- 16.2 In making a request for information, the Authority shall balance its regulatory and enforcement obligations under the Act against the burden imposed on the Licensee in procuring and furnishing such information.
- 16.3 In particular, the Licensee shall submit annual compliance report within ninety (90) days of the end of the Licensee's financial year or such date as the Authority may direct outlining the Licensee's progress in respect of its obligations under this Licence.
- 16.4 The Authority shall have the right to publish information which it received under this Condition unless, following representations by the Licensee, it is satisfied that the information is of such confidential nature that its disclosure would have a material adverse effect on the Licensee's business.

17 INSPECTION

- 17.1 The Licensee shall grant unhindered access to all its premises, facilities, installations, files and records to all officers authorized by the Authority for inspection purposes.
- 17.2 The Licensee shall provide details of its premises, facilities, installations, and networks to the Authority.

18 CHANGE OF SHAREHOLDING STRUCTURE

- 18.1 The Licensee shall not change its shareholding structure without the approval of the Authority.

- 18.2 The Licensee shall notify the Authority if any entity becomes a parent undertaking or controlling entity in relation to the Licensee.
- 18.3 The Licensee shall notify the Authority of any change in the proportion of shares held in a Relevant Company by any person, the acquisition of any shares in a Relevant Company by a person not already holding shares, and the proportion of such shares held by that person immediately before acquisition if, by reason of that acquisition or change, the total number of shares in that Relevant Company held by that person together with any shares held by any nominee or trustee for that person immediately after the change or acquisition exceeds fifteen percent (15%) of the total number of voting shares in that company.
- 18.4 In any case referred to in Conditions 18.2 or 18.3 above, notification shall be given by a date which is thirty (30) days prior to the taking effect of such change or acquisition, as the case may be, or as soon as practicable.
- 18.5 In the event that the Authority disapproves of the change in shareholding, it shall notify the Licensee within thirty (30) days of receipt of notification.
- 18.6 The Licensee and other interested parties may, within thirty (30) days of receipt of the notification envisaged in 18.5 above, make representations to the Authority requesting reconsideration of its disapproval.
- 18.7 The Authority shall, within sixty (60) days of receipt of the request envisaged in Condition 18.6 above and having taken into account representations made by interested parties, make a final determination and giving reasons for its decision.

19 PRE-NOTIFICATION OF JOINT VENTURES

- 19.1 The Licensee shall notify the Authority not later than sixty (60) days before the taking effect of any of the agreements or arrangements to which this Condition applies, giving particulars of the agreements or arrangements.

- 19.5 The Licensee and other interested parties may, within thirty (30) days of receipt of the notification envisaged in Condition 19.4 above, make representations to the Authority requesting reconsideration of its disapproval.
- 19.6 The Authority shall, within sixty (60) days of receipt of the request envisaged in Condition 19.5 above and having taken into account representations made by interested parties, make a final determination and giving reasons for its decision.

20 LICENCE FEES

- 20.1 The Licensee shall pay to the Authority such fees as prescribed by the Rules.

21 UNIVERSAL SERVICE OBLIGATIONS

- 21.1 The Licensee shall pay fees into the Universal Service Fund as prescribed by the Authority in accordance with the Act.
- 21.2 The licensee shall meet any other Universal Service obligations as required by the Authority from time to time subject to reasonable compensation from the above-mentioned Fund.

22 PROVISION OF SERVICES THROUGH CONTRACTORS OR AGENTS

- 22.1 Licensee may exercise any rights permitted in this License or pursuant to the Act through agents, dealers, subcontractors, or licensed service providers acting under and for the Licensee.
- 22.2 The Licensee shall be responsible for the acts and omissions of its agents, dealers, subcontractors and licensed service providers in relation to acts or omissions done under Condition [22.1] above.

23 INTERNATIONAL OBLIGATIONS

23.1 The Authority may designate the Licensee to participate in and be signatory to operating agreements relating to international telecommunication organizations to which Lesotho is a party.

23.2 The Licensee may on its own accord participate in international telecommunication organizations as a Sector Member, Private Sector Member, or Associate Member and shall notify the Authority of such participation.

24 NOTICES

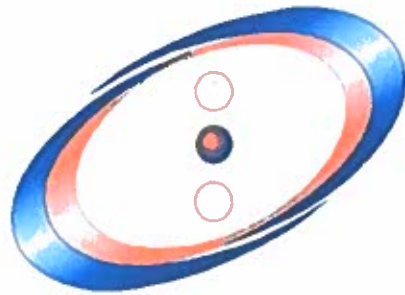
All written notices to the Authority shall be marked for the attention of the Chief Executive Officer and shall be delivered to:

**Lesotho Communications Authority
30 Princess Margaret Road
Old Europa
P.O. Box 15896
Maseru 100
Lesotho**

Or to such other address as the Authority may specify in writing to the Licensee.

ANNEXURE 1

REGULATORY GUIDELINES FOR USE OF 2.4 GHz ISM BAND FOR COMMERCIAL SERVICES IN LESOTHO



**L E S O T H O
C O M M U N I C A T I O N S
A U T H O R I T Y**

**REGULATORY GUIDELINES FOR USE OF
2.4 GHz ISM BAND FOR COMMERCIAL
SERVICES IN LESOTHO**

Ver_June 2014

Introduction

The use of broadband for the last mile access or for final distribution to end users will open up new possibilities and enable a wider range or enriched services to be provided to subscribers. It will also allow home-based users to have access to a variety of IP-based services thereby enhancing universal services objectives; Wireless Fidelity (Wi-Fi) technology will ensure the attainment of the above objectives quickly and at an affordable cost to all categories of users. The Lesotho Communications Authority is hereby providing guidelines for the approved commercial use of the ISM frequencies in Lesotho employing Wi-Fi technology in order to ensure rapid expansion of services and accelerated increase in Internet penetration.

Purpose of Regulation

The main objectives of this set of guidelines is to ensure interference-free operation by all users of the band and to ensure that a guaranteed grade of service is available to the subscribers through established quality of service benchmarks and consumer code of practice.

Acronyms

ISM Industrial, Scientific, and Medical (applications and frequency bands)

Wi-Fi Wireless Fidelity (local area wireless technology that allows an electronic device to participate in computer networking using 2.4 GHz UHF and 5 GHz SHF ISM radio bands.)

ISP Internet Service Provider

OFDM Orthogonal Frequency Division Multiplex

CCK Complementary Code Keying

BPSK Binary Phase Shift Keying

QAM Quadrature Amplitude Modulation

EIRP Effective Isotropic Radiated Power

ATPC Automatic Transmit Power Control

FHSS Frequency-Hopping Spread Sequence

DSSS Direct Sequence Spread Spectrum

IEEE 802.11b Institute of Electrical and Electronic Engineers Industrial open standard

1. Operational Guidelines

- 1.1. ISM band will be permitted for both indoor and outdoor use.
- 1.2. Access to the spectrum will be on a shared basis. There will be no exclusive assignment to any individual or organisations, whether private, public or commercial.
- 1.3. All users, both private and commercial service providers will be guided by the same technical specifications and operational restrictions, with respect to Wi-Fi hotspots deployment.
- 1.4. All equipment to be deployed must be type approved by the Authority prior to deployment. Existing ISM band operators who wish to adapt their present equipment to Wi-Fi deployment must seek approval from the Authority.
- 1.5. All sites in which commercial Wi-Fi hotspots are to be provided must be registered with the Authority.
- 1.6. Wide area deployment will not be allowed on the ISM bands, coverage or transmission distance from a single hotspot must be within the distance stipulated in the technical specification. Transmit power, antenna height and gain must be selected in order to keep emission stipulated distances.

2. Licensing Conditions

- 2.1. All Wi-Fi hotspots must be registered and authorised by the Authority and such authorisation shall be renewable annually.
- 2.2. All commercial Wi-Fi hotspot operators shall possess an ISP license.
- 2.3. All equipment to be deployed must be type approved by the Authority.
- 2.4. A reliable customer billing system must be installed.
- 2.5. Tariffs of operators must be displayed within the operator's premises and registered with the Authority.
- 2.6. All customer premises equipment supplied by the operator must conform with the items listed in the Technical Specifications.

3. Technical Specifications.

3.1. Basic Specifications: IEEE 802.11b (Industry open standard)

- a. Operating Frequency: 2.4 GHz (2 400 – 2483 MHz)
- b. Maximum Data Rate: 11/54 Mbps
- c. Multiple Access Method: Spread Spectrum/OFDM
- d. Digital Modulation Scheme: CCK, BPSK, QAM, etc.
- e. Maximum Coverage Distance: 200 metres indoor/outdoor
- f. Media Access Protocol: Collision Avoidance Technique
- g. Wi-Fi deployments must be IEEE 802.11a, b and g, and newer versions must be backward compatible with 802.11b and g.

3.2. Transmitter Parameter Limits

Transmitter Power Limits (EIRP) = 1 W

The peak power spectral density should not exceed 17 dB in any 1 MHz

- a. Equipment using FHSS modulation ≤ 10 -dBW (100 mW) per 100 kHz EIRP
- b. Other types of modulation ≤ 20 -dBW (10 mW) per MHz EIRP

3.3. Automatic Transmit Power Control (ATPC)

ATPC feature should be declared with the ranges, the related tolerances and subject to tests.

3.4. Dynamic Frequency Selection/Adaptive Frequency Hopping Technique

The equipment should have the capability for dynamic frequency selection from the range of hopping frequencies. The number of hopping channels should not be less than 75. Occupancy on any frequency should not be more than 0.4s in any 30s period.

3.5. Bandwidth and Carrier Separation

- a. Carrier frequencies must be separated by at least 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.
- b. Maximum bandwidth must not exceed 1 MHz.

3.6. Modulation

The Modulation type shall be wideband digital modulation system, using spread spectrum

techniques to transmit and receive.

3.7. Adaptive Frequency Hopping/ Adaptive Dynamic Polling

- a. All systems must be capable of Adaptive Frequency Hopping/ Adaptive Dynamic Polling to enable dynamic allocation of hopping channels.
- b. Frequency-Hopping Spread Sequence (FHSS) modulation
- c. Number of channels >75
- d. Channel separation = separated by channel bandwidth as measured at 20 dB below peak power
- e. Dwell time per channel < 0.4 seconds
- f. DSSS and other forms of modulation