



Framework for the use of the lower part of the 6 GHz (5925 – 6425) MHz band in Nigeria.

January 2026

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Preamble

This Framework is developed and issued based on the powers vested in the Commission to administer and manage spectrum in the Nigerian Communications Sector. It is also pursuant to its powers outlined in Section 121(3) that empowers the Commission to enforce the provisions of the Wireless Telegraphy Act 2004. The purpose of this Framework is to facilitate investment and promote innovation in the communications industry, as well as ensuring the availability of Spectrum for current and future use in the communications industry. The Commission is in the process of opening up the lower part of the 6 GHz band for the provision of communication services in the country. ***The lower 6 GHz band is the frequency range (5925 – 6425 MHz.***

1.0 Introduction

In exercise of the powers conferred by Section 121 of the Nigerian Communications Act (NCA) 2003 and relevant provisions of the Wireless Telegraphy Act 2004, the Commission hereby makes these Framework for the use of the lower 6 GHz band in Nigeria (Framework).

The growing demand for Spectrum resources to support high bandwidth, high-speed data, and low latency applications has resulted in an increased availability of equipment for use on the 6 GHz band. This has necessitated the development of a regulatory framework to guide the usage of the 6 GHz band, particularly the range (5925 – 6425) MHz band, commonly referred to as the lower 6 GHz band, to facilitate the deployment of Wireless Access Systems (WAS) together with other communications services in the band.

WAS/RLAN on the 6 GHz band conforms to IEEE 802.11ax and ETSI EN 303687 standards.

Wireless Access Systems (WAS) are defined by ITU as end-user radio connections to public or private core networks. Technologies in use today for implementing WAS are also noted by ITU to include cellular, cordless telecommunication, and Wireless Local Area Network systems (WLAN).

These Framework are principally intended to prescribe a standard of practice for operations in the lower 6 GHz band and to provide a framework to guide its usage. Any person involved in the development, production, importation, sale, and the usage of WAS on this band are required to comply with these Framework and any other laws relevant to their activity.

2.0 Purpose of Framework

The objectives of this Framework are to:

- Prescribe a regulatory guidance to provide the minimum standards and requirements to access and use lower 6 GHz band for Wi-Fi-6 applications.
- Provide guidance on regulatory and technical conditions for its use to ensure harmful interference-free operation by all users of the band.

3.0 Applicable Legislation and Regulatory Instruments

The Legal and Regulatory provisions which shall govern the implementation of these Framework are:

- The Nigerian Communications Act, 2003
- The Wireless Telegraphy Act 2004
- The Registration of Communications Subscribers Regulations 2022
- Type Approval Regulations 2024
- Consumer Code of Practice Regulations 2024
- Quality of Service Regulations 2024
- Enforcement Processes Regulations 2019
- Any other applicable legal instruments or directions issued by the Commission, however so described.

4.0 Regulatory Conditions

4.1. Licensing Conditions

- 4.1.1. The access and usage of frequencies in this band/range are on a spectrum license- exempt basis. This infers that all Commercial users must hold the relevant and applicable operational licences.

- 4.1.2. Access to the Spectrum will be on a shared basis. There will be no exclusive assignment to any spectrum license-exempt entity, whether for private, public or commercial use.
- 4.1.3. Notwithstanding the provision of 4.1.1 above, spectrum license-exempt users of the lower 6 GHz band for Commercial Services must have the relevant Operational License from the Commission.
- 4.1.4. Fixed Services users are expected to apply and obtain an appropriate Spectrum Licence from the Commission to operate within this band.

4.2. Type-Approval

- 4.2.1 All equipment to be deployed must be Type-Approved by the Commission prior to importation and deployment in compliance with Section 132 of NCA 2003, Type Approval Regulations 2024 and its Business Rules published by the Commission before it can be sold or utilized in Nigeria.
- 4.2.2 An application for Type Approval shall be made using the standard Type Approval application form which may be obtained from the Commission on request or downloaded from its website – www.ncc.gov.ng.
- 4.2.3 All equipment subject to these Framework shall only be supplied or sold to any user if such devices or systems have satisfied the technical provisions stated in these Framework on use of the lower 6 GHz band.
- 4.2.4 Users of WAS which have been Type-Approved by the Commission shall not Operate outside of the lower 6 GHz frequency range.
- 4.2.5 In the event of any alteration by a User, such Operator shall be sanctioned as appropriate pursuant to Part XI of the Type Approval Regulations 2024, published by the Commission.

4.3 Operational Conditions

There is no restriction imposed on types of services to be deployed on this band; however, every technical restriction provided in these Framework must be strictly adhered to.

4.4 Notification of Deployment

Users of the lower 6 GHz band are required to notify the Commission upon deployment of services on this band using the template on the Commission's website via the link with the heading "License Exempt Spectrum Registration Form."

Users subject to these Framework are required to submit to the Commission data on the actual utilization of this frequency on a biannual basis or upon request by the Commission.

4.5 Non-Compliance with Framework

Without prejudice to any provision of these Framework, the Commission shall have the discretion to issue such directives or impose suitable compliance and enforcement measures that will ensure proper alignment of all regulatory requirements that may be contingent upon this Framework or relevant to its implementation.

5.0 Technical Conditions

Applicable Conditions	Requirement(s)
Technology and Services	i. All equipment and devices subject to these Framework shall comply with the technical specifications in Annex 1 of these Framework.

Applicable Conditions	Requirement(s)
	ii. Allowing free (seamless) cross-border use of WAS/RLAN equipment/devices that comply with technical specifications in Annex 1.
Types of Services Required/Permitted	<ul style="list-style-type: none"> i. The lower 6 GHz band is available for WAS/RLAN of the many types that are or will become available in the world markets ii. Low Power Indoor (LPI) devices are restricted to indoor use only. Outdoor use of those Indoor Low Power devices (including vehicles) is not permitted. iii. Very Low Power (VLP) devices for both indoor and outdoor use, except for Fixed outdoor use. Use of Very Low Power devices on radio-controlled models is prohibited. iv. All outdoor Fixed Service deployment on the lower 6 GHz must obtain the relevant Spectrum license from the commission.
Spectrum Sharing	<ul style="list-style-type: none"> i. The lower 6 GHz band is currently used by Fixed links in Nigeria. ii. Compatibility studies in ECC Report 316 and ECC Report 302 have shown that sharing between WAS/RLAN and terrestrial Fixed Service deployments in the lower 6 GHz band is feasible under certain conditions. iii. Licensed Fixed Service users on the lower 6 GHz band shall enjoy protection from interference by licensed-exempt users on the band. iv. Licensed-exempt users are to optimize Spectrum usage and ensure protection of other users by avoiding harmful interference.
Spectrum Fees	There shall be no Spectrum fees for use of these frequencies for licensed-exempt users.
Emission Exposure and Safety	Emission limits shall comply with the International Commission on Non-Ionizing Radiation Protection's (ICNIRP) Electromagnetic Field Force (EMF) exposure limits and/or any other limits as shall be guided by law from time to time.
Management of Interference	<ul style="list-style-type: none"> i. The lower 6 GHz band shall be used by WAS/RLAN equipment on a non-exclusive, non-interference, and non-protected basis.

Applicable Conditions	Requirement(s)
	<ul style="list-style-type: none"> ii. The use of WAS/RLAN is prohibited where it will cause harmful interference to other lawful users of radio Spectrum. Where such harmful interference occurs, the use of such system shall be discontinued and shall only resume after the resolution of such interference. iii. Operators may be required to use mitigation techniques such as antenna discrimination, polarization, frequency offset and power control to facilitate coexistence with systems of other service providers.
Inspection and Compliance	<p>The Commission reserves the right to inspect all systems and devices to ensure compliance with these Framework.</p> <p>Inspections may be conducted directly by the Commission or through a third party.</p>
Reference	Recommendation ITU-R M.1450, M.1801

Table 1 Technical Conditions

6.0 Dispute Resolution

Any dispute arising from time-to-time on these Framework shall first be resolved by the parties in accordance with the dispute resolution clause in their commercial agreement. Where the parties are unable to resolve the disputes, it shall be referred to the Commission for appropriate action in accordance with the provisions of Section 73 of the NCA 2003.

7.0 Regulatory Review

The Commission may from time-to-time review or modify these Framework to ensure its continued relevance and effectiveness, pursuant to Section 121 of the NCA 2003.

8.0 Interpretation

The terms in these Framework shall carry the interpretation used in the Nigerian Communications Act (NCA) 2003 and other subsidiary legislations of the Commission:

“WAS (Wireless Access Systems)” - is defined by ITU as end-user radio connections to public or private core networks. Technologies in use today for implementing WAS is also noted by ITU to include cellular, cordless telecommunication, and WLAN.

“RLAN (Radio Local Area Network)” - is a wireless system that allows devices to connect without the need for cables.

“VLP (Very Low Power)” - VLP devices are designed for short-range mobile applications and can be used indoors or outdoors. VLP devices operate at very low power across short distances and provide very high connection speeds. They are intended to support new applications such as augmented reality, in-car connectivity, healthcare monitoring, small cell coverage, hotspots, etc.

“LPI (Low Power Indoor)” - LPI are electronics that use minimal energy to operate, especially when power sources are limited or unavailable.

“ICNIRP (International Commission on Non-Ionizing Radiation Protection)” - provides scientific advice and guidance on the health and environmental effects of non-ionizing radiation (NIR) to protect people and the environment from detrimental NIR exposure.

“EMF (Electromagnetic Field Force)” – EMF is the electric force produced by the conversion of any form of energy into electric energy. EMF is the electric potential

generated by either an electrochemical cell or a changing magnetic field. EMF are intentionally produced and used to transmit information wirelessly over great distances.

“Non-Exclusive” - a licence which grants the licensee the right to do something and does not preclude other similar licences being granted to other people. Licensed for use in a wide range of contexts and not limited to only one person or group of people, or to only one thing.

“Non-Interference” - refers to the shared use of a frequency band by multiple users without causing or being subject to harmful interference.

“Non-Protected” – refers to frequencies that are shared among radio devices without any one device having priority. Devices using non-protected frequencies cannot cause harmful interference to other radio communication services and no claim may be made for protection of these devices against interference originating from radio communication services.

Issued this..... day of.....2026.

Dr. Aminu Maida
EXECUTIVE VICE CHAIRMAN/CEO
NIGERIAN COMMUNICATIONS COMMISSION

Annex 1 - Technical specifications for the operation of WAS/RLAN in the lower 6 GHz band

A. Channel Arrangement

The following channel arrangements in accordance with ETSI EN 303 687 V1.1.1 (2023-06) shall apply to the operation of the band:

- a) 24 non-overlapping 20 MHz channels, and
- b) 12 non-overlapping 40 MHz channels, for higher bandwidth requirements
- c) 6 non-overlapping 80 MHz channels, and
- d) 3 non-overlapping 160 MHz channels

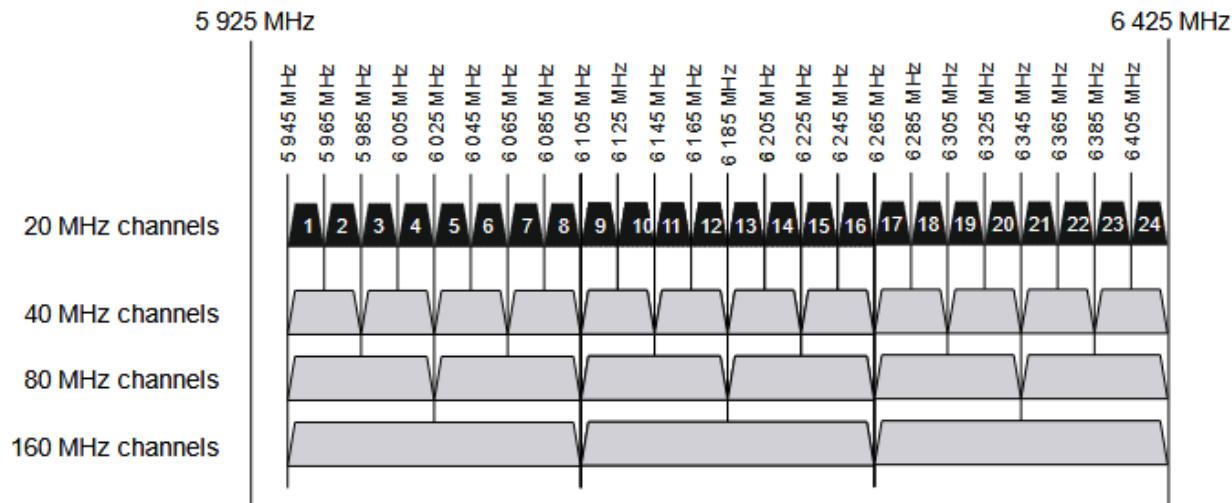


Figure 1: Channel Arrangement for the lower 6 GHz (5925 – 6425) MHz band

B. Power/ Emission Limits

Frequency Band	Application	Maximum Radiated Power or Field Strength Limits	Technical Conditions
5925 – 6425 MHz	WAS/ RLAN	23 dBm (200mW) Mean e.i.r.p. density for in-band emission 10 dBm/MHz	Restricted to indoor use only <ul style="list-style-type: none"> i. Low Power Indoor (LPI) use only (including trains and aircraft). ii. Outdoor use (including in road vehicles) is not permitted.

Frequency Band	Application	Maximum Radiated Power or Field Strength Limits	Technical Conditions
			iii. An adequate Spectrum-sharing mechanism shall be implemented for channel access and occupation. iv. Mean e.i.r.p. density for in-band emissions – 10 dBm/MHz
5925 – 6425 MHz	WAS RLAN	14 dBm (25mW) e.i.r.p.	Very Low Power (VLP) Indoor and outdoor use i. Use of drones is prohibited. ii. An adequate Spectrum-sharing mechanism shall be implemented for channel access and occupation iii. Maximum mean e.i.r.p. for in-band emissions (Note 1) iv. Mean e.i.r.p. density for in-band emissions – 1 dBm/MHz (note 1)
Note 1: The “mean e.i.r.p.” refers to the e.i.r.p. during the transmission burst, which corresponds to the highest power, if power control is implemented.			

Table 2: Allowable Power and Emission Limits