LICENSING FRAMEWORK FOR THE USE 70/80GHz BAND

1. Introduction

The Nigerian Communications Commission (NCC) is making available 2.875GHz Bandwidth each in the Uplink and the Downlink directions of the 70/80GHz (71-74 and 81-84 GHz) Spectrum Band, for Point to Point Applications, using a Light Licensing Model.

Adoption of the Light Licensing Model will ensure that the Spectrum Licence issued for these bands are low cost and available on application to anyone meeting the eligibility criteria which is typically not stringent.

The highly directional pencil beam characteristics of the band will permit systems to be engineered in close proximity without causing interference.

The opening up of this Band will ease the pressure on the Microwave Bands. It will also provide socio-economic benefits through the enhancement of more capacity for backhaul links to support 4G/LTE as high capacity layer on top of the existing 2G/3G Network infrastructure.

2. Objectives of the Licence

The main objectives of granting a 70/80GHz Spectrum Licence are to ensure interference-free operation by all users of the Band and optimal

utilization of the band as well as to set out the usage rights of the Licensee.

3. Scope and Operation

(1) The band can be used for Backhaul, Last mile and Enterprise applications, subject to the conditions of the Communication/Operational Licence of each user.

(2) A basic Channel Spacing of 250 MHz is specified allowing for aggregation of Channels up to 2.875GHz for those applications requiring high throughputs.

4. Eligibility Criteria

(1) To be eligible for the grant of the 70/80 GHz Spectrum Licence, an applicant must possess a valid Spectrum-Dependent Communication/Operational Licence.

(2) Such an applicant must be up-to-date in the payment of all regulatory fees to the Commission such as Annual Operating Levy, Spectrum Fees, National Numbering Plan Fees; etc. on its Communication/Operational Licence.

5. Application Process

(1) Link Registration Database System

The band is intended to be administered online, using the Link Registration Database Management System. In the interim, the band will be administered using manual licensing. The manual process shall cease to

exist when the Commission makes available a permanent Link Registration Database Management System on its website.

(2) Application form

An applicant for a Licence in the 70/80 GHz Bands is required to download and complete an application form **(FORM EBLL and Schedule D)** on the Commission's Website www.ncc.gov.ng. **Spectrum Administration Application form.**

(3) Licence Fee

The cost of a Link shall be calculated using the subsisting Frequency Spectrum (Fees and Pricing etc.) Regulations and the 70/80 GHz Light Licence band Factors issued by the Commission.

The unit price for the 70/80 GHz Frequencies will be uniform throughout the Federal Republic of Nigeria. These prices shall be subject to review from time to time.

The Fee for 70/80 GHz Frequency is calculated using the formula below.

Price per Hop = (U) × (F1) × (F2) × (N+1) per Annum.

Where;

U = Unit Price: ₦18, 000

N = Total number of RF Channels (for N + 1 Systems)

F_1 = Band Factor

0.1 = 71-76/81-86GHz

F_2 = Bandwidth Factor, 8 = 250 MHz, 16 = 500MHz

Example

For 1 hop of 250MHz bandwidth

Price per Hop = (U) × (F1) × (F2) × (N+1) per Annum.

= 18,000 × 0.1 × 8 × 1

= #14,400

For 1 hop of 500MHz bandwidth

Price per Hop = (U) × (F1) × (F2) × (N+1) per Annum.

= 18,000 × 0.1 × 16 × 1

= #28,800

(4) Licence Processing Time

As prescribed in the Nigerian Communications Act (NCA) 2003, the Spectrum licence for an applicant will be processed within a maximum period of 90 days on receipt of a properly completed application form and the specified payment.

6. Service Area

The service area will be as indicated in the Communications/Operational Licence issued by the Commission to the applicant.

7. Link Deployment Register

(1) All commissioned and decommissioned Links must be immediately registered with the Commission with the date and time of deployment via the Data Deployment Template on the Commission's Website. The Commission shall maintain a master database that would be used for the purpose of interference resolution based on First-in-Time and Date criteria.

The Register will be on the Commission's Website for reference purpose. The Register shall be updated each time a link is commissioned or decommissioned.

(2) Failure to register successfully deployed links may lead to sanctions.

8. Technical Specifications for the Use of 70/80GHz Band

The Technical Specifications below shall apply to every Licensee granted a 70/80GHz Spectrum Licence.

(1) Operational Frequency

Frequency Band	Channel plan	Channel Bandwidths
70 GHz (71.125 – 75.825 GHz)	ITU R F.2006-3-12	Minimum of 250 MHz Maximum of 2.875 GHz
80 GHz (81.125 – 85.875 GHz)	ITU R F.2006-3-12	Minimum of 250 MHz Maximum of 2.875 GHz

(2) Technical Restrictions

A. Maximum power at Antenna port 0 dBW

B. Maximum E.I.R.P 55 dBW

C. Automatic Transmitter Power Control (ATPC) Optional

D. Transmitter Maximum Power Spectral Density (PSD) 15 dBW/MHz Offset (0-20% of aggregated Channels)

E. Minimum Antenna Gain 38dBi

F. The Maximum Equivalent Isotropic Radiated Power (E.I.R.P) of the station with Antenna Gain (Gi) is defined by the rules):

i. E.I.R.P $\leq$ +55 [dBw] for Gi $\geq$ 55 dBi.

ii. E.I.R.P $\leq$ +55 – (55 – Gi) [dBw] for 55 dBi > (Gi) $\geq$ 45 dBi.

iii. E.I.R.P $\leq$ +55 – 2(45 – Gi) [dBw] for 45 dBi > Gi $\geq$ 43 dBi.

G. The output Power Spectral Density, at Antenna port, falling outside the edges of the band 71-76 GHz or below the lower edge of the band 81-86 GHz shall be further limited to a maximum of –50 dBW/MHz.

H. For the protection of passive services, in particular the EESS passive, the unwanted emissions of FS systems shall respect, at the antenna port, the limit mask provided by –40 dBW/100 MHz at 86 GHz and reducing to –50 dBW/100 MHz at 87 GHz.

I. For collocation of services as an interference mitigation measure an Antenna vertical separation distance of 1.5 – 2m should be maintained.

9. Licence Conditions

(1) The Licence will be issued by the Nigerian Communications Commission pursuant to section 121 of Nigerian Communication Act No. 19 of 2003 and Section 6 of Wireless Telegraphy Act of 1990.

(2) The 70/80 GHz is a shared band, therefore a Licensee must take reasonable steps as necessary to ensure that harmful interference is not caused to existing links.

10. Licence Tenure

(1) Every 70/80 GHz Spectrum Licence will have a tenure of one (1) year from the date it is issued with an option for renewal on such terms and conditions as the Commission may stipulate.

(2) A Licence would be eligible for renewal if the Licensee has no outstanding obligation to the Commission.

(3) A licence would be automatically renewed provided the licensee meets all obligations except where a licensee has sent a written request not to renew its licence.

11. Rollout Obligations

The use it-or-lose it condition applies to the Spectrum Licence. Licensees are given 12 Months within which to roll out service, otherwise the Assignment will be forfeited after the expiration of 12 months from the date of Assignment.

12. **Access to site for Inspection**

The Licensee shall permit any person authorized by the Commission to have access to its Radio Equipment for the purpose of investigation at any time.

13. Revocation

The Commission may withdraw the Assignment and invoke sanctions if it is used contrary to the conditions of the Spectrum Licence without written approval from the Commission; or if found that false information on actual utilization of the Spectrum was provided to the Commission.

14. Interference Management

Licensees will be expected to coordinate and resolve interference problems among themselves. Where such interference issues cannot be resolved it should be referred to the Commission.

15. Dispute Resolution

(1) In the event of an interference dispute, the Commission shall give priority to the first link registered.

(2) A new entrant causing interference to a registered user may be required to decommission the link.

(3) The decision of the Commission in this regard will be binding on all the parties involved in the dispute.

16. Equipment Type Approval

All equipment to be deployed must be duly Type Approved by the Commission. For Type Approval requirements visit www.ncc.gov.ng Technical Standard Type Approval.

17. Definition of Terms

EBLL	E-Band Light Licensing
E.I.R.P	Effective Isotropic Radiated Power
EESS	Earth Exploration Satellite Services
FS	Fixed Services
ITU	International Telecommunication Union
LTE	Long-Term Evolution
NCC	Nigerian Communications Commission

Issued by the
Nigerian Communications Commission
This _____ day of _____ 2015