



Policy for New Spectrum Bands – 700 MHz, 11 GHz, 12 GHz and 42 GHz

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1. Introduction

On 16 January, 2012, URCA published a “Draft Policy for New Spectrum Bands – 700 MHz, 11 GHz, 12 GHz and 42 GHz”, ECS 1/2012 (the “Consultation Document”) seeking comments on proposals for the opening of each of the subject bands, based on the results of its previous consultation on the Opening of New Spectrum Bands (ECS 23/2010).

This document contains URCA’s policies for the opening of the 700 MHz, 11 GHz, 12 GHz and 42 GHz spectrum bands, having regard to the comments received from interested stakeholders in response to URCA’s consultative document – “Draft Policy for New Spectrum Bands – 700 MHz, 11 GHz, 12 GHz and 42 GHz” (ECS 1/2012). URCA’s Statement of Results on the Consultation has been published separately as ECS 08/2012.

1.1 The Consultation Document

The Consultation Document contained, in addition to URCA’s responses on certain outstanding questions from the previous consultation (ECS 23/2010), the following:

- URCA’s proposals for interim spectrum licence fees to be charged for new bands opened, pending a full review of Spectrum Fees to be undertaken within 2012;
- URCA’s proposed interim policies for geographical licensing of new spectrum bands, which sought to regularise the categories of licences issued for any particular band; and,
- a draft Policy for each of the 700 MHz, 11GHz, 12 GHz and 42 GHz bands, which URCA proposed to open.

The Consultation Document asked six specific questions based on the matters addressed, and URCA invited comments to be submitted by 20 February 2012 on those questions.

The Consultation Questions were as follows:

Consultation Question #1:

Do you agree with URCA’s proposals for interim pricing of newly opened standard spectrum bands? Please provide detailed reasons for your response, including if appropriate, alternative proposals.

Consultation Question #2:

Do you agree with URCA's approach to the geographical categories for licensing of newly opened spectrum bands? Please provide detailed reasons for your response, including if appropriate, alternative proposals.

Consultation Question #3:

Do you agree with URCA's proposals for licensing the 700 MHz band? Please provide detailed reasons for your response, including if appropriate, alternative proposals.

Consultation Question #4:

Do you agree with URCA's proposals for packaging, pricing and licensing the 11 GHz band? Please provide detailed reasons for your response, including if appropriate, alternative proposals.

Consultation Question #5:

Do you agree with URCA's proposals for packaging, pricing and licensing the 12 GHz band? Please provide detailed reasons for your response, including if appropriate, alternative proposals.

Consultation Question #6:

Do you agree with URCA's proposals for packaging, pricing and licensing the 42 GHz band? Please provide detailed reasons for your response, including if appropriate, alternative proposals.

Five (5) companies, which are listed below in order of receipt, responded to the Consultation Document:

- ❖ Digicel Group (DG)
- ❖ Bahamas Telecommunications Co. Ltd. (BTC)
- ❖ IP Solutions International Ltd. (IPSI)
- ❖ Peace Holdings Co. Ltd (PHL)
- ❖ Cable Bahamas Ltd., Caribbean Crossings Ltd. and Systems Resource Group Limited (CBL)

The full text of each response can be found at www.urbahamas.bs in the Publications section, and URCA's Statement of Results detailing its reasoning and decisions on each comment, is published as ECS 08/2012.

1.2 Process for Opening New Spectrum Bands

URCA's Guidelines for the Opening of New Spectrum Bands (ECS 11/2011) describe the procedures URCA will follow to allocate standard spectrum. Interested persons will note that the Guidelines envisage that URCA will follow a seven (7) step process for opening new spectrum bands.

Step 1: Submission of Expressions of Interest

Step 2: Assessment of Expressions of Interest

Step 3: URCA to prepare draft policy for that band

Step 4: Consultation on the draft policy

Step 5: Finalising the policy

Step 6: Implementation of the policy

Step 7: Licence award

An Invitation for Expressions of Interest in specific spectrum bands having been issued in document ECS 23/2010 (Step 1), the Consultation Document summarised URCA's assessment of the Expressions of Interest received (Step 2), and set out and invited comments on URCA's Draft Policy for each of the relevant bands (Steps 3 and 4).

URCA, having reviewed and considered the comments received now issues in this document its Policy for each band (Step 5), and indicates the timetables for implementation (Step 6).

2. Spectrum Pricing and Licensing Issues

2.1 Interim Pricing of Spectrum

URCA proposes to conduct a comprehensive review of its spectrum fees to be commenced in 2012. URCA also proposes in 2012 to review some of the wider spectrum policy issues that will impact the demand, efficiency of use, and value of spectrum licensed in The Bahamas.

In the interim, URCA has adopted a pricing structure for new spectrum bands based on the following general propositions:

- i. Interim prices for new spectrum bands will be set, and will apply until such time as URCA completes its review of prices and amends its fee schedule to reflect the revised prices.
- ii. Interim prices will be based on existing spectrum fees, so far as possible. This means that where a new band is comparable to an existing band in which a spectrum fee already applies, URCA will apply a fee that is reasonably comparable to (though not always the same as) the fee for the already open band.
- iii. Interim prices for new bands which are not directly comparable to existing licensed bands will have been calculated based on a scale which reduces the price of spectrum as the frequency increases, in order to compensate for the changes in characteristics of higher frequency bands and the impact such changes have on their economic value. URCA has also had regard to the commercial value of particular bands based on the services that can be offered using those bands.
- iv. URCA's review of spectrum fees will encompass all spectrum, both standard and premium. In respect of premium spectrum, URCA will make recommendations to the Sector Minister for any new pricing of premium spectrum under section 30 and 93(1) of the Communications Act, 2009 (Comms Act).

Table 1 below sets out the pricing for newly opened bands. It should be noted that the table applies only to Standard Spectrum bands that are not already open, and therefore existing licences, licence for Premium Spectrum, or new licences in already open bands will not be affected by the interim prices.

Table 1 – URCA’s Interim Spectrum Fees for Newly Opened Bands

Spectrum Frequency Range	Current Spectrum Fees - Point to Point	Interim Point to Point Spectrum Fee	Current Spectrum Fees - Point to Multipoint	Interim Point to Multipoint Spectrum Fee (The Bahamas)
300 MHz to 500 MHz	N/A	N/A	\$10 per khz (Private Land Base Station)	\$10 per khz (Private Land Base Station) \$16,000 per Mhz (Public Access)
Above 500 MHz to 960 Mhz	N/A	N/A	\$5.2 per KHz (public trunking) \$1.56 per KHz (private trunking)	\$5.2 per KHz (public trunking) \$1.56 per KHz (private trunking) \$8,000 per MHz (Public Access)
Above 960 MHz to 2.6 GHz	Bandwidth up to 50kHz per link - \$450 Bandwidth ≥50kHz but <3.5MHz per link - \$620 Bandwidth ≥3.5 MHz but <30 MHz per link - \$800 ≥30 MHz - \$1,200	Bandwidth up to 50kHz per link - \$450 Bandwidth ≥50kHz but <3.5MHz per link - \$620 Bandwidth ≥3.5 MHz but <30 MHz per link - \$800 ≥30 MHz - \$1,200	Varies from \$133.30 per MHz, to \$5,000 per MHz for premium bands in this range.	\$4,000 per MHz
Above 2.6 GHz to 6.7 GHz	Bandwidth up to 50kHz per link - \$450 Bandwidth ≥50kHz but <3.5MHz per link - \$620 Bandwidth ≥3.5 MHz but <30 MHz per link - \$800 ≥30 MHz - \$1,200	No Change	3.5 GHz band is open, and licensed at fee of \$2000 per MHz for the first MHz pair, \$1,000 each additional MHz	\$2,000 per MHz
Above 6.7 GHz to 30 GHz	Bandwidth up to 50kHz per link - \$450 Bandwidth ≥50kHz but <3.5MHz per link - \$620 Bandwidth ≥3.5 MHz but <30 MHz per link - \$800 ≥30 MHz - \$1,200	No Change *National licences permitting unlimited point to point use of a specific frequency range throughout The Bahamas will be priced at ten (10) times the single link price.	N/A	\$20 per MHz

Spectrum Frequency Range	Current Spectrum Fees - Point to Point	Interim Point to Point Spectrum Fee	Current Spectrum Fees - Point to Multipoint	Interim Point to Multipoint Spectrum Fee (The Bahamas)
Above 30 GHz	Up to 50kHz per link - \$450 ≥50kHz but <3.5MHz per link - \$620 ≥3.5 MHz but <30 MHz per link - \$800 Bandwidth ≥30 MHz per link - \$1,200	No Change *National licences permitting unlimited point to point use of a specific frequency range throughout The Bahamas will be priced at ten (10) times the single link price.	N/A	\$10 per MHz

Single Island licences (permitted in bands above 2.6 GHz), shall be priced as follows:

- New Providence – 100% of the spectrum fee for The Bahamas
- Grand Bahama – 20% of the spectrum fee for The Bahamas
- Any other island – 10% of the spectrum fee for The Bahamas

2.2 Geographical Licensing

URCA will commence a full review of various spectrum licensing issues and formulation of revised licensing policies in 2013. For the time being, however, in respect of new bands to be opened, URCA will limit the geographic options for licensing available to applicants in the following ways:

Licensing of Wireless Access Spectrum in Newly Opened Bands up to 2.6 GHz

URCA notes that propagation and other characteristics make bands in this range particularly popular for commercial provision of broadband wireless access over large areas, and increase their value. URCA, is of the view that continuing to licence new spectrum bands in this range for ad hoc groups of Islands in The Bahamas does not serve to further the Electronic Communications Sector (ECS) Policy objectives. URCA therefore proposes on an interim basis to open new bands within this frequency range for licensing only for a geographic area which will be defined as “*The Bahamas*”. For the purpose of this interim position, URCA will include coverage rights and obligations in an Individual Spectrum Licence (ISL) issued for “*The Bahamas*” consistent with the following:

- An ISL granted for “The Bahamas” shall grant the Licensee exclusive use of the licensed frequencies throughout the whole of The Bahamas, including its territorial waters; and,
- An ISL granted for “The Bahamas” shall require the Licensee, within timeframes set out in the Licence, to provide specified coverage levels in, at a minimum, New Providence, Grand Bahama, Abaco, Eleuthera and at least six (6) other populated islands in The Bahamas”.

Licensing of Wireless Access Spectrum in Newly Opened Bands above 2.6 GHz but below 6.7 GHz

Bands above 2.5 GHz are generally less valuable, and URCA notes that they are generally in lower demand in The Bahamas. URCA therefore considers that these bands do not present the same level of concern as the lower bands. However, URCA maintains its position that the current *ad hoc* geographic licensing is unsuitable and should not be continued.

URCA will therefore grant ISLs for these bands for either “The Bahamas”, or for use on a “Single Island”.

- An ISL granted for “The Bahamas” shall:
 - grant the Licensee exclusive use of the licensed frequencies throughout the whole of The Bahamas, including its territorial waters; and,
 - require the Licensee, within timeframes set out in the Licence, to provide specified coverage levels in, at a minimum, New Providence, Grand Bahama, Abaco, Eleuthera and six (6) other populated islands in The Bahamas.
- An ISL granted for a Single Island shall:
 - grant the Licensee exclusive use of the licensed frequencies on the selected island;
 - require the licensee to cover a particular percentage of the selected island within a time period specified in the ISL; and,
 - attract the following spectrum fees:
 - New Providence – 100% of the spectrum fee for The Bahamas
 - Grand Bahama – 20% of the spectrum fee for The Bahamas
 - Any other island – 10% of the spectrum fee for The Bahamas

Licensing of Wireless Access Spectrum in Newly Opened Bands above 6.7 GHz

URCA will continue to apply the current approach to newly opened bands above 6.7 GHz, and therefore persons will still be able to obtain licences on a per-island basis, countrywide or for such other geographic area as desirable. There will be no requirement for specific coverage levels or roll-out periods in the IOL for these bands.

3. Policy for the 700 MHz Band

3.1 Frequency Range and Allocation to Services

The frequencies in the range 698 MHz to 806 MHz shall be referred to as the 700 MHz band.

The National Spectrum Plan indicates an allocation to “Broadcasting – Television”, while the ITU Region 2 allocation is to Broadcasting services as primary, with Fixed and Mobile services as secondary allocations. URCA will make appropriate amendments to the National Spectrum Plan in its next review, due by March 2013.

URCA will assign the spectrum in the 700 MHz band to fixed and mobile services in accordance with the following specifications.

3.2 Packaging of the Band

URCA has divided the entire 700 MHz band into 18 channels of 6 MHz each, which will be allocated as blocks of either 6 MHz (unpaired) or 12 MHz (paired) as shown in Figure 1 and Table 2 below:

Figure 1: 700 MHz Frequency Band Plan

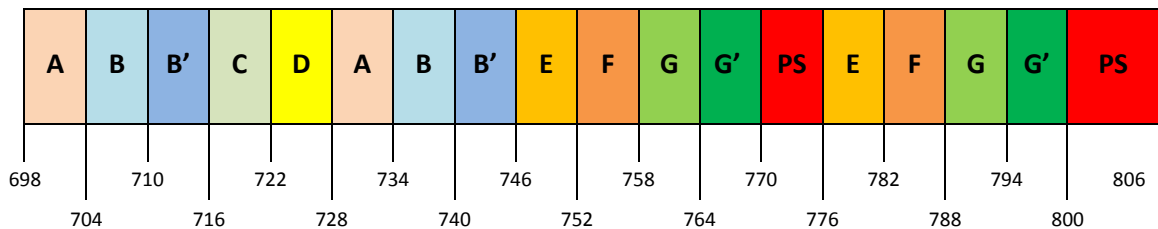


Table 2: 700 MHz Spectrum Blocks

BLOCK	FREQUENCY RANGE	BANDWIDTH	PAIRING	NOTES
A	698-704 MHz and 728-734 MHz	12 MHz	2 x 6 MHz	Mobile services restricted.
B	704 – 710 MHz and 734 – 740 MHz	12 MHz	2 x 6 MHz	Mobile services licensees only.
B'	710 – 716 MHz and 740 – 746 MHz	12 MHz	2 X 6 MHz	Mobile services licensees only.
C	716 – 722 MHz	6 MHz	Unpaired	Mobile services restricted.
D	722 – 728 MHz	6 MHz	Unpaired	Mobile services restricted.
E	746 – 752 MHz and 776 – 782 MHz	12 MHz	2 x 6 MHz	Mobile services restricted.
F	752 – 758 MHz and 782 – 788 MHz	12 MHz	2 x 6 MHz	Mobile services restricted.
G	758 – 764 MHz and 788 – 794 MHz	12 MHz	2 x 6 MHz	Mobile services licensees only.
G'	764 – 770 MHz and 794 – 800 MHz	12 MHz	2 x 6 MHz	Mobile services licensees only.
PS	770 – 776 MHz and 800 to 806 MHz	12 MHz	2 x 6 MHz	Public Health and Safety reserved

- The maximum assignment per operator in the 700 MHz band will be 2 blocks.
- Operators granted the B or G block, will be given first preference in obtaining the B' and G' respectively. An operator cannot apply for more than one of the B and G blocks.
- The PS blocks are reserved for Public Health and Safety use, and will be addressed by URCA in a separate process later.
- As there is currently only one entity exclusively authorised to offer mobile services, it is expected that there will be at least two blocks remaining out of the unrestricted blocks (B, B', G and G').The remaining blocks will be held by URCA in reserve until the expiry of mobile exclusivity, when they could be offered to any new entrant authorised to provide mobile services.

3.3 Licence Terms and Conditions

URCA shall grant Individual Spectrum Licences for spectrum in the 700 MHz band in accordance with URCA's Licensing Guidelines in force from time to time, save for additional terms and conditions as set out below:

- The Spectrum shall be licensed on a National basis only. That is, the Licensee will be authorized to use the spectrum in all parts of The Bahamas, and will be required to roll-out its services throughout a majority of The Bahamas as specified below.
- URCA, recognizing the value of the 700 MHz spectrum and its importance to the development of electronic communications services in The Bahamas, shall include the following additional terms and conditions in the Individual Spectrum Licences for this spectrum:
 - The Licensee will be required to put the spectrum into active, commercial use within eighteen (18) months of the date on which the Licence is granted, failing which URCA will commence proceedings to revoke the grant of the Licence, and recover the spectrum.
 - The Licence shall be valid for a term of fifteen (15) years from the date of grant.
 - The primary use of the spectrum granted must be to build and maintain a public "access" network; any usage for backhaul must be secondary and incidental only.
 - The spectrum must be used for the provision of electronic communications services available to the general public across The Bahamas, in accordance with the roll out commitments set out below.
 - A Licensee granted spectrum in blocks A, C, D, E or F shall be required to roll out electronic communications services (on a commercial basis) using the spectrum to communities in The Bahamas in accordance with the following schedule, at a minimum:
 - Within 18 months of grant of Licence – Spectrum to be put in active service on at least New Providence and Grand Bahama;
 - Within 30 months of grant of Licence – Roll-out on Abaco and Eleuthera with at least 75% population coverage, achieve 99% population coverage on New Providence and Grand Bahama;

- Within 42 months of grant of Licence – Roll-out on at least two additional Family Islands with at least 75% population coverage, achieve 99% population coverage on Abaco and Eleuthera;
 - Within 54 months of grant of Licence – Roll-out on at least two additional Family Islands with at least 75% population coverage; and
 - Within 66 months of grant of Licence – Roll-out on at least two additional Family Islands with at least 75% population coverage.
- A Licensee granted spectrum in blocks B, B', G or G' shall be required to roll out electronic communications services (on a commercial basis) using the spectrum to communities in The Bahamas in accordance with the following schedule, at a minimum:
- Within 18 months of grant of Licence – Spectrum to be put in active service on at least New Providence, Grand Bahama, Abaco and Eleuthera with at least 75% population coverage;
 - Within 30 months of grant of Licence – Roll-out on at least two additional Family Islands with at least 75% population coverage and achieve 99% population coverage on New Providence, Grand Bahama, Abaco and Eleuthera;
 - Within 42 months of grant of Licence – Roll-out on at least two additional Family Islands with at least 75% population coverage; and
 - Within 54 months of grant of Licence – Roll-out on at least two additional Family Islands with at least 75% population coverage.

3.4 Application Procedure

Timing of Applications

URCA has, simultaneously with the issue of this Policy, issued a Request for Applications (RFA) document, inviting qualified persons to apply for an Individual Spectrum Licence (ISL) for spectrum in the 700 MHz band, on a competitive basis (to the extent that demand exceeds supply).

An Individual Operating Licence (IOL) will also be required for the provision of electronic communications services to the public using the 700 MHz spectrum.

Applicants that are not already holders of an Individual Operating Licence will be required to apply for an IOL concurrently with their application in response to the RFA. Such applications will be considered concurrently with URCA's assessment of the spectrum applications within the RFA process. In the event that an applicant is

successful in obtaining an IOL, but is not awarded 700 MHz spectrum, the applicant may apply for other available spectrum, adopt other methods of providing services to the public, or may withdraw its IOL application. An ISL will not be granted to persons who do not either already hold an IOL or have successfully applied for the grant of an IOL.

Applications for an ISL must be submitted to URCA fully in accordance with the RFA, by the response deadline.

Information to be Submitted

- Applicants will be required to provide the following information in response to the RFA:
 - General Information, including:
 - Type of Entity;
 - Contact details;
 - Ownership;
 - Information about the control and guidance of the applicant; and,
 - Auditors and Legal advisors.
 - Proof of Financial Stability, including;
 - Financial Statements (if incorporated) or equivalent information regarding assets, net worth and trading history; and,
 - References, including financial references.
 - Business Plan, including:
 - Service and Marketing Proposals;
 - Technical Proposal showing network topography and technologies to be used;
 - Income and Expenditure projections for at least three years; and,
 - Personnel plans, showing adequate technical and other expertise.
 - Choice of Spectrum Blocks.

Selection Process

In order to be granted spectrum in the 700 MHz band, applicants shall be required to achieve a minimum score of 70% overall in URCA's assessment of the information provided in their application based on the relevant selection criteria, and outline of which is provided below.

- The following Selection Criteria have been adopted, with weighting where indicated for each:

- Presence in The Bahamas – YES/NO – applicants must have a presence in The Bahamas as required by the Communications Act 2009.
 - Fit and Proper person to hold a licence under the Communications Act 2009 – YES/NO – successful applicants must be “Fit and Proper” persons as required by the Communications Act 2009.
 - Financial Strength (30%) – The applicant must demonstrate the necessary financial resources to provide the services outlined, and meet all roll-out and other commitments contained in the Licence. URCA will assess the financial capacity of the applicant based on the information provided in the application.
 - Technical Capability (30%) – The applicant has put forward a sound technical plan for coverage and service provision using the spectrum, and has the technical resources and expertise to implement it. URCA will assess the technical capability of the applicant based on the information provided in the application.
 - Electronic Communications Service Benefits (30%) – The applicant proposes to provide electronic communications services of a quality/coverage and price that would further the achievement of the ECS Policy Objectives. Matters considered would include (but are not limited to) access to new technologies, enhanced services, reduction in prices, increased competition in markets, particularly those with limited or no current service etc.
 - Other Benefits (10%) – The applicant will generally enhance Bahamian society consistent with ECS Policy Objectives (e.g., jobs, activity in underserved communities, community development and betterment).
- Once the applications are assessed by URCA, the successful applicants will be invited to choose their spectrum blocks from those blocks for which they are eligible. Applicants will choose in order of their scores in the assessment with highest scores first. Ties will be resolved either by negotiation or random selection.
 - Full details of the selection criteria and the marking scheme will be set out in the RFA.

3.5 Licence Fees

The Licences for 700 MHz spectrum shall be subject, on an interim basis, to the following annual spectrum fees:

- \$8,000 per MHz for the B, B', G and G' blocks;
- \$6,000 per MHz per year for all other blocks;

- Pricing for the PS block will be determined by URCA if necessary (noting the possibility that an exemption would apply under section 17 of the Comms Act) in conjunction with the licensing or assignment of that block.

The above licence fees shall be payable until URCA's Fee Schedule is amended to reflect a revised fee for spectrum assignments in the 700 MHz band.

3.6 Time Schedule for Application and Licensing

URCA has, simultaneously with the issue of this Policy, issued a Request for Applications for 700 MHz Spectrum Blocks (ECS 10/2012). Applications may only be submitted in response to and in accordance with the RFA process. Applications will not be accepted outside such process.

4 Policy for the 11 GHz Band

4.1 Frequency Range

The frequencies in the range 10,700 MHz to 11,700 MHz shall be referred to as the 11 GHz band.

4.2 Packaging of the Band

The 11 GHz band is opened for fixed, point to point services, with a channelling arrangement the same as ITU-R F.387-10¹, recommendation 1.2. URCA notes that this plan is also adopted by the Federal Communication Commission (FCC), as outlined in their Code of Federal Regulation 47, for *Fixed Services*.

As an example, the channelling arrangement for 40 MHz bandwidth frequency channels for Fixed Service in the 11 GHz band would result in a channelling arrangement as set out in Figure 2 and the accompanying table below.

¹Radio Regulations of the International Telecommunications Union (ITU), formulated by the Radiocommunications Division of the ITU (ITU-R)

Figure 2: 11 GHz Band, 40 MHz Packaging

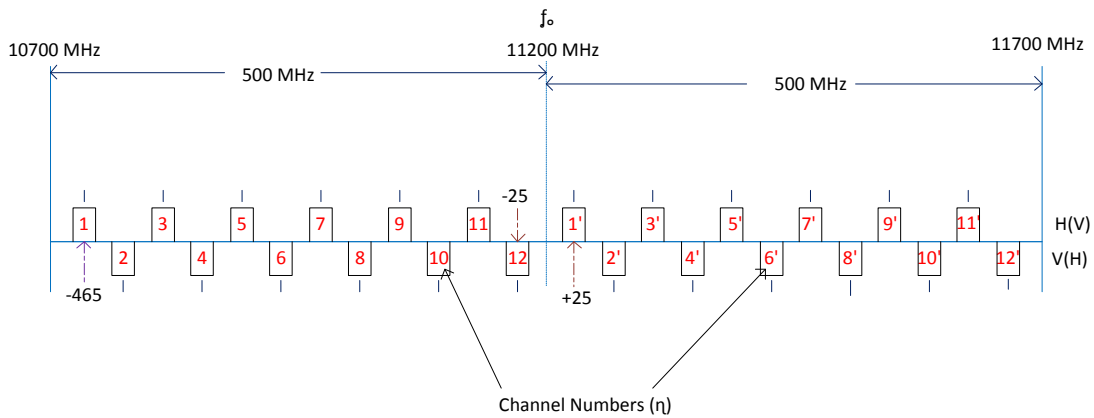
Lower half of the band	$f_n = f_o - 505 + 40 n$	$n = 1, 2, 3, \dots, 12$
Upper half of the band	$f_{n'} = f_o + 15 + 40 n$	$f_o = 11200 \text{ MHz}$

Where:

f_o is the frequency at the centre of the range comprised in the band (11,200 MHz);

f_n is the centre frequency of channel n in the lower half of the band; and,

$f_{n'}$ is the centre frequency of channel n' in the upper half of the band.



RF channel arrangement in the 11 GHz band according to ITU-R F.387-11 recommendation 1.2

n	f_n	$f_{n'}$
1	10735	11225
2	10775	11265
3	10815	11305
4	10855	11345
5	10895	11385
6	10935	11425
7	10975	11465
8	11015	11505
9	11055	11545
10	11095	11585
11	11135	11625
12	11175	11665

URCA proposes to permit any feasible channel size up to a maximum of 40 MHz on a case by case basis, subject to the same formulae.

The technical parameters established for the Band will include performance requirements, and transmit power and emission standards, which will be required to comply with FCC CFRs 47 Part 101.

4.3 Licence Terms and Conditions

The Licences to be granted shall be Individual Spectrum Licences granted in accordance with URCA's Licensing Guidelines in force from time to time.

4.4 Application Procedure

Applicants shall submit applications to URCA in accordance with URCA's Licensing Guidelines in force at the time of submission of the application. Applications will be considered by URCA and spectrum granted on a "first come first served" basis.

4.5 Licence Fees

The Licences granted shall be subject to Licence Fees calculated in accordance with URCA's Fee Schedule.

4.6 Time Schedule for Application and Licensing

Applications may be submitted at any time following the publication of this Policy for the 11 GHz band, and shall be considered by URCA in accordance with the timeframes set out in URCA's Licensing Guidelines.

5 Policy for the 12 GHz Band

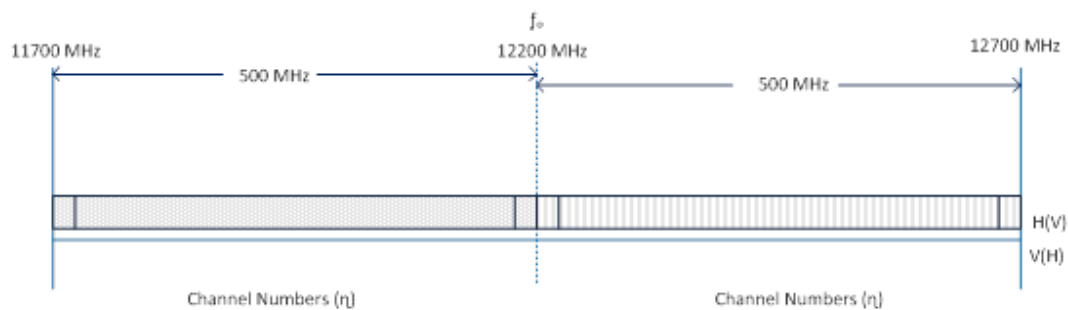
5.1 Frequency Range

The 12 GHz band shall comprise those frequencies in the range 11,700 MHz to 12,700 MHz.

5.2 Packaging of the 12 GHz Band

The 12 GHz band is opened for point to multipoint systems with a channelling arrangement consistent with the Federal Communication Commission (FCC) outline set out in the Code of Federal Regulations 47, Part 101.1405.

Figure 3: 12 GHz Packaging



Licences shall be granted on an exclusive basis, within any of the following Geographic categories:

1. "The Bahamas" – Includes the whole of the Commonwealth of The Bahamas;
2. "Single Island" – Any one Island.

Licences may be granted for any feasible block size within the above plan, subject to URCA's planning to ensure maximum usage of the band.

The technical rules established for the operation shall be technologically neutral and will not specify a particular equipment configuration or methodology.

In reaching its decision, URCA has noted the MITRE Report² whose conclusion supports the sharing of the 12 GHz band between terrestrial point to multipoint and satellite services, which is also supported by the FCC³.

URCA will provide protection to the existing Direct Broadcast Satellite (DBS) and non-geostationary satellite orbit fixed-satellite services (NGSOFSS) by limiting the interference potential to a level that does not give rise to harmful interference as defined by s.33 of the Comms Act.

5.3 Licence Terms and Conditions

The Licences to be granted shall be Individual Spectrum Licences granted in accordance with URCA's Licensing Guidelines in force from time to time. The Licensee will also be required to observe the following technical restrictions⁴:

- Maximum power limit of 14 dBm per 24 megahertz Effective Isotropic Radiated Power (EIRP);
- Equivalent power flux density (EPFD) limit of -168.4 dBW/m²/4kHz
- URCA will adopt a prescribed methodology and predictive model to calculate EPFD values⁵ that would limit increases in Basic Service Set (BSS) unavailability caused by the Licensee's systems to a baseline level of BSS unavailability set by URCA. The unavailability allowance ascribed to the licensee's system will be in addition to the unavailability allowance ascribed to NGSOFSS operations in the 12 GHz band.
- The Licensee must site and design its transmitting antennas to avoid causing harmful interference to existing DBS customers.
- URCA will permit fixed one-way operations, but exclude mobile and aeronautical operations by the Licensee. Permissible operations include the flexibility for two-way services whereby the 12 GHz band could be used for the downstream⁶ path,

² MTR 01W0000024: MITRE Technical Report; Analysis of Potential Interference to DBS in the 12.2-12.7 GHz Band. April 2001.

³FCC 02-116; Memorandum Opinion and Order and Second Report and Order. May 23, 2002.

⁴ Based on FCC 47 CFR Ch.1, Part 101

⁵ FCC 47 CFR Ch. 1: 101.105 Interference Protection Criteria

⁶In satellite telecommunications terminology, uplink means the signal sent from Earth to the satellite and downlink means the signal from the satellite to earth.

and any upstream (or return) path could be located in other spectrum or over a wire line.

- The Licensee's signals shall not exceed a power flux density (PFD) of – 135dBW/m²/4kHz measured and/or calculated at the surface of the earth at distances greater than 3 km (1.86m) from the transmitting site.

5.4 Application Procedure

Applicants may submit applications to URCA in accordance with URCA's Licensing Guidelines in force at the time of submission of the application. Applications will be considered by URCA and spectrum granted on a "first come first served" basis.

5.5 Licence Fees

The Licences granted shall be subject, on an interim basis, to the following fees:

- The Bahamas - \$20 per MHz per annum;
- Single Island:
 - New Providence – \$20 per MHz per annum
 - Grand Bahama – \$4 per MHz per annum
 - Any other island - \$2 per MHz per annum.

The above fees shall be the applicable licence fee until URCA's Fee Schedule is amended to reflect a fee for spectrum in the 12 GHz band.

5.6 Time Schedule for Application and Licensing

Applications may be submitted at any time following the publication of this Policy for the 12 GHz band, and shall be considered by URCA in accordance with the timeframes set out in URCA's Licensing Guidelines.

6 Policy for the 42 GHz Band

6.1 Frequency Range

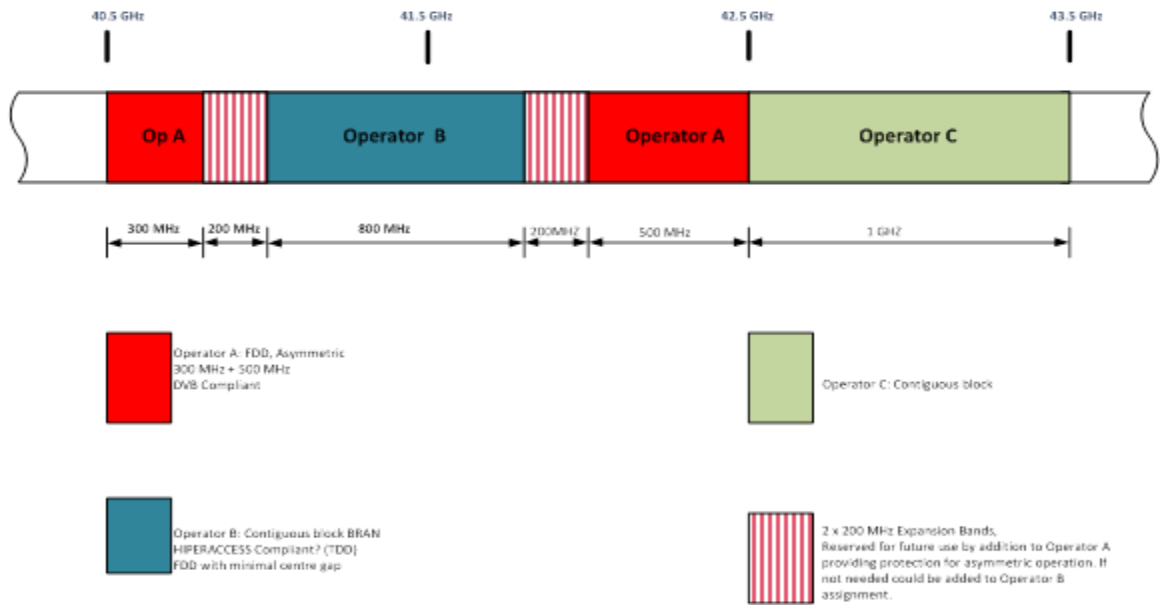
This policy proposes the licensing of the 40,500 MHz to 43,500 MHz frequency range for fixed, point-to-point microwave systems, and terrestrial broadband fixed wireless access systems.

6.2 Packaging of the 42 GHz Band

The Band arrangement in the 42 GHz band permits up to a 1 GHz contiguous block. The Band Plan is as follows:

- i. The block designations are Operator A, Operator B and Operator C;
- ii. Operator A can be paired to facilitate frequency division duplex (FDD) system;
- iii. Operator B can represent a contiguous block, FDD with minimal centre gap;
- iv. Time division duplex (TDD) system is represented by Operator B as well;
- v. Operators may be Asymmetric by 300 MHz + 500 MHz;
- vi. Expansion blocks 2 x 200 MHz larger frequency blocks can be made available through the aggregation for 50 MHz paired blocks.

Figure 4: 42 GHz Packaging



URCA will include appropriate technical parameters based on the technical specifications set out in the licence application.

Licences shall be granted on an exclusive basis, within any of the following Geographic categories:

1. "The Bahamas" – Includes the whole of the Commonwealth of The Bahamas;
2. "Single Island" – Any one Island.

A maximum of one block will be granted to a single operator.

6.3 Licence Terms and Conditions

The Licences to be granted shall be Individual Spectrum Licences granted in accordance with URCA's Licensing Guidelines in force from time to time.

6.4 Application Procedure

Applicants shall submit applications to URCA in accordance with URCA's Licensing Guidelines in force at the time of submission of the application. Applications will be considered by URCA and spectrum granted on a "first come first served" basis.

6.5 Licence Fees

The Licences granted shall be subject, on an interim basis, to the following fees:

- The Bahamas - \$10 per MHz per annum;
- Single Island:
 - New Providence – \$10 per MHz per annum
 - Grand Bahama – \$2 per MHz per annum
 - Any other island - \$1 per MHz per annum

The above fees shall be the applicable licence fee until URCA's Fee Schedule is amended to reflect a fee for spectrum in the 12 GHz band.

6.6 Time Schedule for Application and Licensing

Applications may be submitted at any time following the publication of this Policy for the 42 GHz band, and shall be considered by URCA in accordance with the timeframes set out in URCA's Licensing Guidelines.