

## Public Notice

Reference No.: TOD/0618/005

### **Public Notice on assignment of frequency blocks for the operation of Fixed Wireless Access systems in the band 27.5-29.5 GHz in the Kingdom of Bahrain**

11 June 2018

Purpose: This document is to provide guidance to all stakeholders in relation to assignment of frequency blocks for the operation of FWA systems in the band 27.5-29.5 GHz in the Kingdom of Bahrain by the Telecommunications Regulatory Authority and the Directorate of Wireless Licensing Frequencies and Monitoring

## 1 INTRODUCTION

- 1.1 In accordance with the National Frequency Plan<sup>i</sup> (the “NFP”) of the Kingdom of Bahrain (the “Kingdom”), the frequency band 27.5-29.5 GHz has been allocated to the Fixed Service on a primary basis in the Kingdom along with other co-primary and secondary services.
- 1.2 Fixed Wireless Access (“FWA”) systems, developed for the band 27.5-29.5 GHz can vary significantly in their system characteristics and design (e.g. access scheme, duplex method and modulation), thus having different impact on each other.
- 1.3 In order to avoid interference of FWA systems operating on the same frequency band or in the same geographical area, measures must be introduced which allow for coexistence of systems independent from their specific system characteristics and design while keeping the spectrum utilization efficient
- 1.4 The purpose of this document (the “Notice”) is to provide guidance in relation to the current position of the Telecommunications Regulatory Authority and the Directorate of Wireless Licensing Frequencies and Monitoring (jointly referred as the “Authorities”), in respect of the assignment of frequency blocks for the operation of FWA systems in the band 27.5-29.5 GHz in the Kingdom to ensure efficient spectrum utilization and coexistence of multiple FWA systems in the same geographical area.
- 1.5 This Notice is a general statement of the Authorities’ current views on this matter based upon existing technology limitations. As technological innovation in regards to the deployment and utilisation of spectrum frequency bands advances, the Authorities’ position may similarly change. The Authorities reserve their right to amend this Notice as deemed appropriate.

## 2 CURRENT POSITION STATEMENT

- 2.1 The content of this Notice is intended to assist relevant stakeholders in understanding the approach the Authorities will take with regards to:
  - (a) FWA in the band 27.5-29.5 GHz in the Kingdom;
  - (b) size of frequency blocks, blocks arrangement and guard bands;

---

<sup>i</sup> The National Frequency Plan (version 1/2016) accessible at:  
<http://www.iga.gov.bh/en/category/publications>

- (c) assignment of the frequency blocks;
- (d) frequency license fees.

### 3 DEFINITIONS

#### 3.1 For the purpose of this Notice:

A meaning or definition provided for any word, phrase or expression under the Telecommunications Law<sup>ii</sup> shall also be applicable to such word, phrase or expression in this Notice; unless the context requires otherwise.

The following terms and expressions shall have the following meaning unless the context requires otherwise:

**“Radiocommunication Service”** means a service involving the transmission, emission and/or reception of radio waves for specific telecommunication purposes.

**“Fixed Service”** means a Radiocommunication Service between specified fixed points.

**“End User”** is a human being, organization, or telecommunications system that accesses the network in order to communicate via the services provided by the network.

**“End-User Termination”** means End-User’s radio equipment antenna.

**“Wireless Access”** is the End-User radio connection(s) to core networks.

**“Fixed Wireless Access”** is the Wireless Access application in which the location of the End-User termination and the network access point to be connected to the End-User are fixed.

**“Point-to-multipoint system”<sup>iii</sup>** is a system that establishes connections between a single specified point and more than one other specified point.

---

<sup>ii</sup> The Telecommunications Law of the Kingdom of Bahrain promulgated by Legislative Decree No. 48 of 2002.

<sup>iii</sup> Generally point-to-multipoint systems offer FWA, hence the use of the term “fixed wireless access” defined above to distinguish such point to multipoint systems from mobile or nomadic wireless access systems.

#### **4 APPLICATION OF THIS NOTICE**

4.1 This Notice applies to the Fixed Wireless Access systems associated with the Point-to-Multipoint systems in the frequency band 27.5-29.5 GHz in the territory of the Kingdom.

#### **5 SIZE OF FREQUENCY BLOCKS, GUARD BANDS AND ARRANGEMENT OF BLOCKS**

5.1 There are 11 assignable paired frequency blocks each of which consisting of two 28 MHz slots. Each block is separated by guard bands to ensure the coexistence of multiple FWA systems in the territory of the Kingdom.

5.2 Polarizations of emissions in each slot can be either vertical or horizontal. Aggregation of two adjacent slots into a single channel is strictly not allowed. Only FDD technique is permitted.

5.3 Annex 1 to this Notice details the arrangements of slots, blocks and guard bands.

#### **6 ASSIGNMENT OF FREQUENCY BLOCKS**

6.1 Upon submission of an application for FWA, depending on the availability, one pair of frequency block will be assigned to the applicant nationwide.

6.2 There are only 11 assignable paired frequency blocks in 27.5-29.5 GHz bands. Blocks are assigned to applicants on a “first come, first served” basis.

6.3 Prior to assignment of frequency blocks, the Authorities may conduct international coordination with possibly affected Administrations where required to do so by virtue of bi-lateral, regional and/or international agreements.

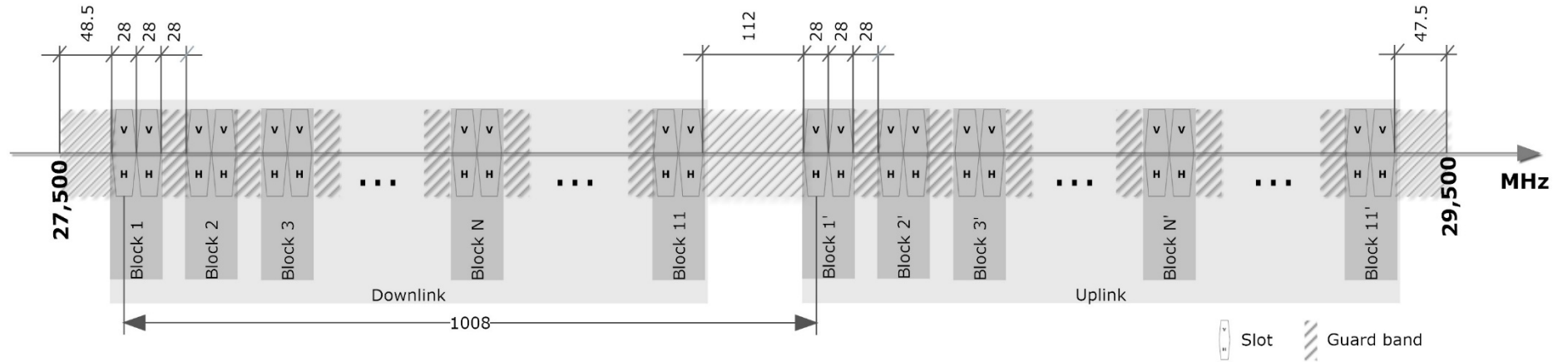
6.4 Frequency licenses for the operation of FWA systems are granted for a one year term which may be renewed annually, at the sole discretion of the Authorities, upon request of the Licensee(s).

#### **7 FREQUENCY LICENSE FEES**

7.1 The Frequency license fee for the assigned frequency block is calculated in accordance with the Schedule of Fees in force at the time of the application. This calculation is based on nationwide use.

## ANNEX 1

### Arrangements of frequency blocks for FWA systems in 27.5-29.5 GHz band in the Kingdom of Bahrain



1. Slot's size is 28 MHz
2. Block's size is  $28 \times 2 = 56$  MHz
3. FDD only
4. Aggregation of two adjacent slots into a single channel is strictly not allowed