

Use of the 5 GHz Shared Band for the Provision of Public Mobile Services

8 February 2018



Background



Existing Use of the 5 GHz Shared Band in Hong Kong

Frequency Range (Bandwidth)	Hong Kong Allocation	Band Plan and Existing Utilisation
5150 – 5250 MHz (100 MHz)	AERONAUTICAL RADIONAVIGATION MOBILE except aeronautical mobile	(a) Telecommunications Apparatus
5250 – 5350 MHz (100 MHz)	RADIOLOCATION MOBILE except aeronautical mobile	(a) Telecommunications Apparatus
5470 – 5725 MHz (255 MHz)	RADIOLOCATION MOBILE except aeronautical mobile	(a) Radiolocation (b) Amateur-satellite (c) Telecommunications Apparatus
5725 – 5850 MHz (125 MHz)	INDUSTRIAL, SCIENTIFIC AND MEDICAL (ISM) Amateur	(a) ISM Equipment (b) Amateur (c) Telecommunications Apparatus

Notes:

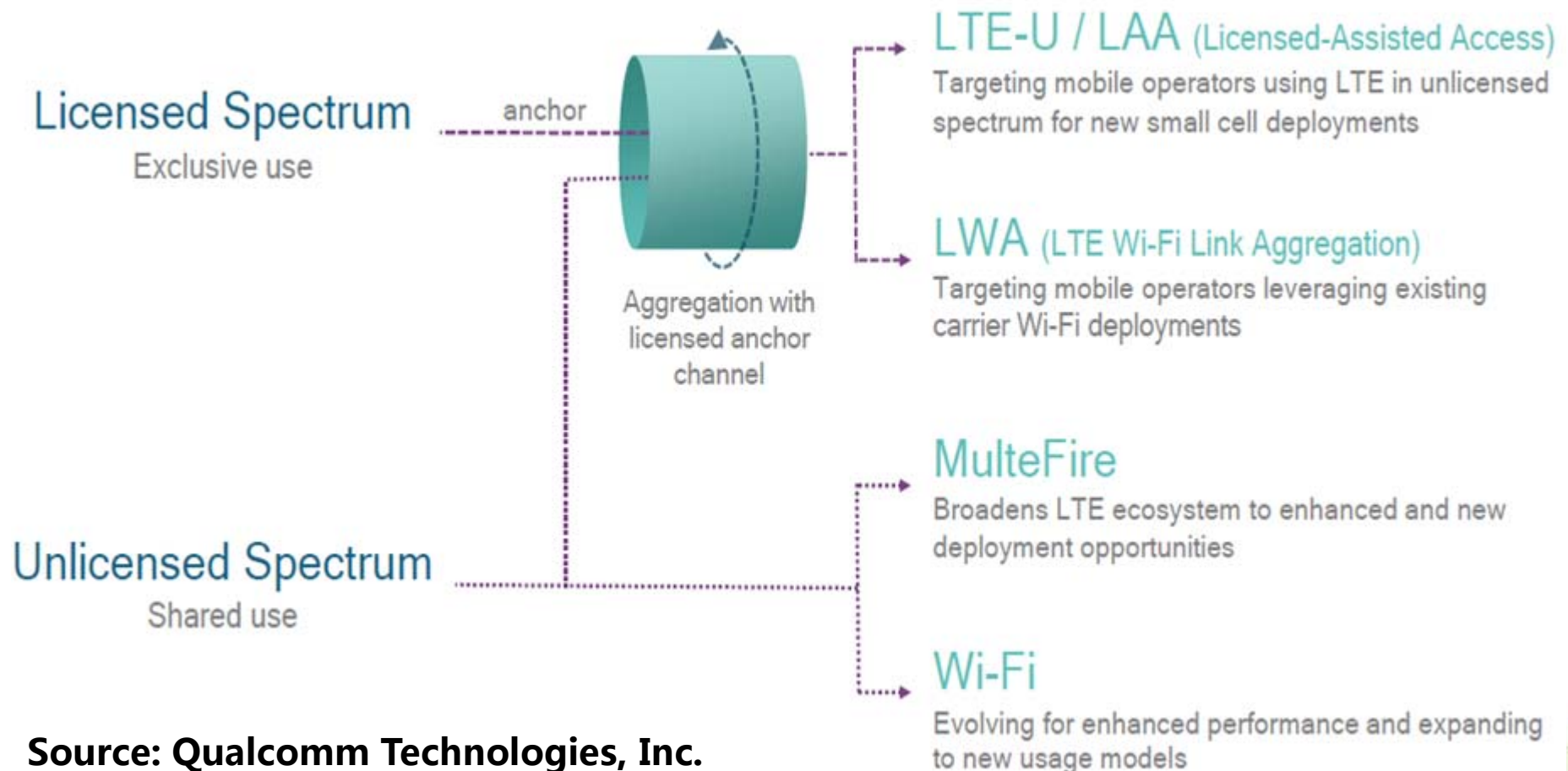
1. The above four sub-bands amount to a total bandwidth of **580 MHz**. The 5725 – 5850 MHz band is currently not allocated for mobile services.
2. In the column entitled "Hong Kong Allocation", services with names printed in capital letters are allocated as "primary" services, whereas services with names printed in normal letters are "secondary" services.
3. The use of the frequency bands for telecommunications apparatus is subject to the requirements stipulated under the Telecommunications (Telecommunications Apparatus) (Exemption from Licensing) Order (Cap. 106Z).

Usage of the 5 GHz Band in the World

US (Max EIRP)	In/Outdoor (4W)	In/Outdoor (1W)		In/Outdoor (1W)	In/Outdoor (4W)	
EU (Max EIRP)	Indoor (200mW)	Indoor (200mW)		In/Outdoor (1W)	In/Outdoor (4W)	
China (Max EIRP)	Indoor (200mW)	Indoor (200mW)			In/Outdoor (2W)	
Hong Kong (Max EIRP)	Indoor (200mW)	Indoor (200mW)		In/Outdoor (1W)	In/Outdoor (4W)	
	5.150 GHz	5.250 GHz	5.350 GHz	5.470 GHz	5.725 GHz	5.850 GHz

Note: In Hong Kong, there are **580 MHz** available in the 5 GHz band, but the 5725 – 5850 MHz band is at present not allocated for mobile services

Emerging Technologies for the Use of the 5 GHz Shared Band for the Provision of Public Mobile Services (1)



Source: Qualcomm Technologies, Inc.



Emerging Technologies for the Use of the 5 GHz Shared Band for the Provision of Public Mobile Services (2)

	LAA	LTE-U	LWA	MulteFire
Licensed Anchor	Yes	Yes	Yes	No
3GPP Standard	Yes (Release 13/14)	No	Yes (Release 13)	No
Listen Before Talk	Yes	No	Yes	Yes
Overseas Trials and/or Planned Deployments	Trials in the US, Italy, Singapore, South Africa and South Korea	One deployment in the US	Planned in Singapore and Taiwan	No known trial or planned deployment
Trials in Hong Kong	Yes	No	No	No

Overseas Development of LAA

- Planned Deployments in the United States
 - ❑ T-Mobile would launch LAA starting from Q1 of 2018
 - ❑ AT&T had deployed commercial LAA technology in Indianapolis, with a peak download speed of around 1 Gbps
 - ❑ Verizon had commercially deployed LAA in a city in Florida, with further network deployments to commence during 2018
- Major mobile operators in other countries such as Italy, Singapore, South Africa and South Korea are actively conducting trials for LAA



Trials in Hong Kong

- One Mobile Network Operator (“MNO”) has completed a technical trial on the use of the 5 GHz Shared Band for LAA, the results of which indicate satisfactory co-existence of LAA and Wi-Fi devices operating in the 5 GHz Shared Band in an uncoordinated and unprotected manner
- Another MNO is conducting a similar trial, which will be completed in the first half of 2018
- The CA has also received an application from an MNO for the use of LAA in the 5 GHz Shared Band for the provision of public mobile services



Proposed Licensing Framework



Major Issues of Consideration

1. Adoption of Widely Recognised Technology to promote effective sharing of the spectrum
2. Harmonisation with Existing Regime for Public Mobile Services
3. Parties who may be authorised to deploy LTE in the 5 GHz Shared Band



Proposed Licensing and Regulatory Arrangement Using the 5 GHz Shared Band (1)

The use of the 5 GHz Shared Band for the provision of public mobile services shall be licensed and regulated in the same way as public mobile services under the existing regime of the UCL

At the outset, UCL licensees assigned with licensed mobile spectrum may apply to the CA for the use of the 5 GHz Shared Band for the provision of public mobile services

New Special Condition under the UCL will be prescribed to make clear that the use of the 5 GHz Shared Band is on uncoordinated, unprotected basis

Proposed Licensing and Regulatory Arrangement Using the 5 GHz Shared Band (2)

Only the use of LAA technology with mandatory implementation of the LBT feature will be allowed initially to ensure compatibility and effective sharing with other uses and users in 5 GHz Shared Band

When other technologies not requiring the use of licensed anchor become standardised and widely recognised internationally, the CA is prepared to consider application from interested parties other than MNOs for the use of the 5 GHz Shared Band to provide public mobile services

Proposed Amendment to the Hong Kong Table of Frequency Allocations

- The CA proposes to seek views and comments from the general public about the **allocation of the 5725 – 5850 MHz sub-band to mobile services on a primary basis** under the Hong Kong Table of Frequency Allocations, pursuant to section 32H of the TO

Frequency Range (Bandwidth)	Hong Kong Allocation	Band Plan and Existing Utilisation
5725 – 5850 MHz (125 MHz)	ISM NEW MOBILE except aeronautical mobile Amateur	(a) ISM Equipment (b) Amateur (c) Telecommunications Apparatus



Views Sought

- Members are welcome to express their views and comments on the proposals and may make written submissions to the CA in response to the Consultation Paper on or before the deadline of **1 March 2018**



Thank you

