

RADIO SPECTRUM AND TECHNICAL STANDARDS ADVISORY COMMITTEE

**Proposed Revision to HKCA 1039 Performance Specification
for Radiocommunications Apparatus
Operating in the 2.4 GHz or 5 GHz Band
and Employing Frequency Hopping or Digital Modulation**

Introduction

This paper proposes the adoption of the following revised HKCA specification:

HKCA 1039 Issue 6	Performance specification for radiocommunications apparatus operating in the 2.4 GHz or 5 GHz band and employing frequency hopping or digital modulation
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Current Situation

2. HKCA 1039 stipulates the minimum performance requirements for radiocommunications apparatus operating in the 2.4 GHz or 5 GHz¹ band and employing frequency hopping or digital modulation. Under the Telecommunications (Telecommunications Apparatus) (Exemption from Licensing) Order, persons using radiocommunications apparatus that comply with HKCA 1039 are exempted from licensing. There are now a wide range of apparatus covered by HKCA 1039 including cordless telephones, Bluetooth gears, wireless local area network devices, etc. Relevant ETSI standards and technical requirements under “Part 15 of Title 47 of the US Code of Federal Regulations²” (47 CFR Part 15) are adopted in HKCA 1039.

¹ The 5 GHz band comprises three sub-bands: 5150 – 5350 MHz, 5470 – 5725 MHz and 5725 – 5850 MHz.

² The Code of Federal Regulations is an annual codification of the general and permanent rules published in the Federal Register of the US Government. Title 47 is on the subject of telecommunications and is administered by the Federal Communications Commission.

Background

Radio Devices Interfering Radar Systems in US

3. Certain types of devices operating in the 5 GHz band can be used without a licence in US if they are certified to comply with the technical requirements specified in 47 CFR Part 15. Since there are radar systems operating within the 5250 - 5350 MHz and 5470 - 5725 MHz bands, devices certified under 47 CFR Part 15 shall employ Dynamic Frequency Selection (DFS) in order to avoid causing interference to radar systems. The operating frequency bands and technical requirements of these types of devices are outlined in the table below:

Frequency Band	DFS	Technical Requirements
5150 - 5250 MHz	No	47 CFR Part 15, Subpart E - governing Unlicensed National Information Infrastructure (UNII) devices
5250 - 5350 MHz	Yes	
5470 - 5725 MHz	Yes	
5725 - 5825 MHz	No	
5725 - 5850 MHz	No	47 CFR Part 15, Section 15.247 - governing radio devices using frequency hopping and digital modulation

4. Since 2009, the Federal Communications Commission (FCC) has received reports of interference to Terminal Doppler Weather Radar (TDWR) systems. TDWR systems are deployed to detect wind shear in the vicinity of airports for enhancing aviation safety. The FCC found that devices certified to operate in the 5725 - 5825 MHz band under Subpart E or in the 5725 - 5850 MHz band under Section 15.247 were illegally modified to operate in the 5470 - 5725 MHz band thus causing interference to TDWR systems.

Revised Technical Requirements in the 5 GHz Band

5. In order to tackle the interference problem caused to TDWR systems, on 1 May 2014, the FCC promulgated in the Federal Register³ revised technical requirements for devices operating in the 5 GHz band and the transitional arrangements for the implementation. The salient points and the implementation

³ <http://www.gpo.gov/fdsys/pkg/FR-2014-05-01/pdf/2014-09279.pdf>

timelines are given below:

- (i) On 2 June 2014, the band 5725 - 5825 MHz in Subpart E was extended to 5725 - 5850 MHz to align with the frequency range specified in Section 15.247. In addition, technical parameters of Subpart E were also revised to align with those of Section 15.247. Devices using digital modulation would continue to be certified under Section 15.247 or Subpart E until 1 June 2015.
- (ii) With effect from 2 June 2015, devices using digital modulation in the 5725 - 5850 MHz band will no longer be certified under Section 15.247. Instead, these devices shall only be certified under Subpart E.
- (iii) Devices using digital modulation certified under Subpart E shall be equipped with security features such that third parties are not able to re-program the devices to operate outside the parameters for which the devices were certified and that DFS functionality cannot be disabled.

Proposed Revisions to HKCA 1039

6. In the current version of HKCA 1039, radiocommunications apparatus operating in the 5725 – 5850 MHz band can use either frequency hopping spread spectrum or digital modulation as given in Section 15.247. In addition, HKCA 1039 specifies the frequency range of 5725 - 5825 MHz when making reference to Subpart E. Accordingly, after 2 June 2015, HKCA 1039 shall be amended taking into account that digital modulation devices shall be excluded from Section 15.247 and the expanded frequency range from 5725 - 5825 MHz to 5725 - 5850 MHz in Subpart E. The proposed revisions to HKCA 1039 (Issue 6 of HKCA 1039) are shown in Annex.

7. HKCA 1039 also adopts ETSI EN 302 502⁴ standard for certification of devices operating in the 5725 - 5850 MHz band. In Region 1, the band 5725 -

⁴ EN 302 502 - Broadband Radio Access Network (BRAN); 5.8 GHz fixed broadband data transmitting systems; Harmonized EN covering essential requirements of article 3.2 of the R&TT Directive.

5850 MHz is allocated to radiolocation service on a primary basis. EN 302 502 mandates the use of DFS in order to ensure the co-existence with radar systems. In this connection, ETSI does not propose any revision to the EN standards. Nevertheless, OFCA will continue to keep monitoring relevant development of ETSI standards.

Certification Requirement

8. Radiocommunications apparatus covered by the Telecommunications (Telecommunications Apparatus) (Exemption from Licensing) Order is classified under Voluntary Certification Scheme of the Hong Kong Telecommunications equipment Evaluation and Certification Scheme. Certification of such apparatus is voluntary, but manufacturers, suppliers and dealers must ensure that their apparatus complies with HKCA 1039 even if they do not apply for certification.

WTO Notification

9. As the proposed Issue 6 of HKCA 1039 is based on open standards, notification to the World Trade Organisation (WTO) is not necessary.

Recommendation

10. It is recommended that Issue 6 of HKCA 1039 in the Annex be adopted by the Communications Authority.

Advice Sought

11. Members are invited to give comments on the recommendation above.

Office of the Communications Authority
April 2015