

**RADIO SPECTRUM AND TECHNICAL STANDARDS
ADVISORY COMMITTEE**

**Proposed New Performance Specification for
New Radio (NR) User Equipment**

Purpose

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

HKCA 1085	Performance Specification for New Radio (NR)
Issue 1	User Equipment

Background

2. With the spectrum assignments in the 700 MHz, 3.3 GHz, 3.5 GHz, 4.9 GHz, 6/7 GHz and 26/28 GHz bands¹ to mobile network operators, the fifth generation mobile (“5G”) services have been commercially launched in Hong Kong since April 2020. NR user equipment is now certified using several type acceptance criteria including TAC 006², TAC 008³ and TAC 009⁴, which draw reference to the relevant specifications published by the 3rd Generation Partnership Project (“3GPP”) as follows for selected test items to ensure efficient use of radio spectrum and to avoid harmful interference –

¹ 700 MHz band refers to 703 – 738 MHz band paired with 758 – 793 MHz band
3.3 GHz band refers to 3300 – 3400 MHz band
3.5 GHz band refers to 3400 – 3600 MHz band
4.9 GHz band refers to 4800 – 4960 MHz band
6/7 GHz band refers to 6570 – 6770 MHz and 6925 – 7125 MHz band
26/28 GHz band refer to 24.25 – 28.35 GHz band

² TAC 006 “Type Acceptance Criteria for 5G New Radio User Equipment Operating in the 24.25 – 28.35 GHz Band” is available at https://www.ofca.gov.hk/filemanager/ofca/en/content_791/tac006.pdf.

³ TAC 008 “Type Acceptance Criteria for 5G New Radio User Equipment Operating Below 6 GHz Band” is available at https://www.ofca.gov.hk/filemanager/ofca/en/content_791/tac008.pdf.

⁴ TAC 009 “Type Acceptance Criteria for 5G New Radio User Equipment for Interworking Operation with Other Radios” is available at https://www.ofca.gov.hk/filemanager/ofca/en/content_791/tac009.pdf.

- (a) TAC 006 - “Type Acceptance Criteria for 5G New Radio User Equipment Operating in the 24.25 – 28.35 GHz Band” draws reference to 3GPP TS 38.521-2;
- (b) TAC 008 - “Type Acceptance Criteria for 5G New Radio User Equipment Operating Below 6 GHz Band” draws reference to 3GPP TS 38.521-1; and
- (c) TAC 009 - “Type Acceptance Criteria for 5G New Radio User Equipment for Interworking Operation with Other Radios” draws reference to 3GPP TS 38.521-3.

3. Recently, the European Telecommunications Standards Institute (“ETSI”) has expanded the set of harmonised standards⁵ ETSI EN 301 908 to cover the requirements of NR user equipment with the publication of the following harmonised standards –

- (a) ETSI EN 301 908-1 V15.2.1 covering the common technical requirements of user equipment, repeaters and base stations for International Mobile Telecommunications (“IMT”); and
- (b) ETSI EN 301 908-25 V15.1.1⁶ covering NR user equipment operating in specified frequency bands.

4. ETSI EN 301 908-25 V15.1.1 covers all frequency bands used for provision of mobile services in Hong Kong, except for the paired band 825 – 837.5 MHz / 870 – 882.5 MHz (“850 MHz band”), the 4.9 GHz band and the 6/7 GHz band as these bands are not allocated to mobile services in European Union countries. These three bands are covered by 3GPP TS 38.521-1 and 3GPP TS 38.521-3. As such, it is advisable that reference should be drawn to these relevant 3GPP specifications in the proposed new specification HKCA 1085 to cater for the 850 MHz, 4.9 GHz and 6/7 GHz bands.

⁵ Compliance with the relevant harmonised standards gives presumption of conformity to the essential requirements of the European Union (“EU”), i.e. efficient use of radio spectrum and avoidance of harmful interference, which are required before the concerned radio equipment can be marketed and used in EU countries.

⁶ ETSI EN 301 908-25 V15.1.1 has been developed with reference to 3GPP TS 38.521-1, 3GPP TS 38.521-2 and 3GPP TS 38.521-3. However, these harmonised standards cover only operating frequency bands which have been allocated to mobile services in EU countries, and selected test items which are necessary to meet the essential requirements of EU, i.e. efficient use of radio spectrum and avoidance of harmful interference. On the other hand, the 3GPP specifications, developed by industry players from all over the world, have wider coverage of test items and operating frequency bands.

Proposed New Specification HKCA 1085

5. Having considered the frequency bands and technical requirements, new specification HKCA 1085 is proposed to include both the relevant ETSI and 3GPP standards to allow certification of NR user equipment for all relevant frequency bands for accessing mobile services in Hong Kong. The proposed new HKCA specification will also replace TAC 006, TAC 008 and TAC 009.

6. Salient points of the proposed new specification HKCA 1085 are given below –

- (a) the scope covers NR user equipment and embraces TAC 006, TAC 008 and TAC 009;
- (b) all applicable frequency bands in Hong Kong are covered; and
- (c) reference is drawn to ETSI EN 301 908-1 and ETSI EN 301 908-25, as well as 3GPP TS 38.521-1, 3GPP TS 38.521-2 and 3GPP TS 38.521-3.

The proposed new specification HKCA 1085 is given at **Annex**.

Certification Requirement

7. NR user equipment falling into the scope of HKCA 1085 is classified under the Voluntary Certification Scheme of the Hong Kong Telecommunications Equipment Evaluation and Certification Scheme. Certification of such equipment is on a voluntary basis, but manufacturers, suppliers and dealers must ensure that their equipment complies with HKCA 1085 even if they do not apply for certification.

8. An NR user equipment operating in close proximity (up to 20 cm) to human head (e.g. mobile phone) shall be certified against HKCA 1084 “Conformance Specification for Radiation Safety of Wireless Devices” if it is certified against HKCA 1085.

World Trade Organization (“WTO”) Notification

9. As the proposed new specification HKCA 1085 is based on open standards, notification to the WTO is not required.

Recommendation

10. It is recommended that the proposed new specification HKCA 1085 be submitted to the Communications Authority for adoption.

Advice Sought

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

Office of the Communications Authority
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