For Discussion
on 29 January 2024

SSAC Paper 2/2024

RADIO SPECTRUM AND TECHNICAL STANDARDS ADVISORY COMMITTEE

Proposed Revision to HKCA 1065 Performance Specification for Multi-Standard Radio (MSR) Base Station

Purpose

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

HKCA 1065 Issue 4	Performance Specification for Multi-Standard Radio (MSR) Base Station

Background

2. The current issue of HKCA 1065 (Issue 3) covers MSR base stations supporting the E-UTRA, UTRA and GSM technologies[1] and draws reference to the old versions of the harmonised European standards ETSI EN 301 908-1 and ETSI EN 301 908-18 published by the European Telecommunications Standards Institute ("ETSI"). Since 2021, equipment vendors have launched MSR base stations supporting 5G New Radio ("NR"). These MSR base stations with NR support are currently certified using the type acceptance criteria TAC 010[2], which draws reference to 3GPP TS 37.141 published by the 3rd Generation Partnership Project ("3GPP") for selected test items to ensure efficient use of radio spectrum and to avoid harmful interference.

3. ETSI has expanded the set of harmonised standards[3] ETSI EN 301 908 to cover the requirements of MSR base station supporting NR, with

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[1] E-UTRA: Evolved Universal Terrestrial Radio Access
UTRA: Universal Terrestrial Radio Access
GSM: Global System for Mobile communications

[2] TAC 010 "Type Acceptance Criteria for 5G NR, E-UTRA, UTRA and GSM/EDGE Multi-Standard Radio (MSR) Base Station Equipment Operating Below 6 GHz" is available at https://www.ofca.gov.hk/filemanager/ofca/en/content_791/tac010.pdf.

[3] 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.

the publication of the following harmonised standards –

(a) ETSI EN 301 908-1 V15.2.1 covering common requirements of MSR base station with NR support; and

(b) ETSI EN 301 908-18 V15.1.1 [4] covering MSR base station operating in specified frequency bands with NR support.

4. Apart from the operating frequency bands covered by the current issue of HKCA 1065, ETSI EN 301 908-18 V15.1.1 also covers the following frequency bands being used for public mobile services in Hong Kong –

(a) the paired band 703 – 738 MHz / 758 – 793 MHz ("700 MHz band");

(b) the unpaired band 3300 – 3400 MHz ("3.3 GHz band"); and

(c) the unpaired band 3400 – 3600 MHz ("3.5 GHz band").

However, the paired band 825 – 837.5 MHz / 870 – 882.5 MHz ("850 MHz band") being used for mobile services in Hong Kong is not covered by ETSI EN 301 908-18 V15.1.1 as it is not allocated to mobile services in EU countries. This band is covered by 3GPP TS 37.141 under reference in TAC 010 for MSR base station with NR support, and in TAC 004[5] for MSR base station without NR support. As such, it is advisable that reference should also be drawn to 3GPP TS 37.141 in the proposed revision to HKCA 1065 to cater for the 850 MHz band.

5. In TAC 010, there is an additional requirement on unwanted emissions of not exceeding -52 dBm/MHz in the 3700 – 4200 MHz band, mainly aiming to protect satellite master antenna television ("SMATV") systems operating in this band from potential interference of MSR base stations. It is advisable that this requirement should also be included in the proposed revision to HKCA 1065.

Proposed Revision to HKCA 1065

6. Having considered the frequency bands and technical requirements, revision to the existing specification HKCA 1065 is proposed to include both the relevant ETSI and 3GPP standards to allow certification of MSR base station for

[4] ETSI EN 301 908-18 V15.1.1 has been developed with reference to 3GPP TS 37.141 but covers 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.

[5] TAC 004 "Type Acceptance Criteria for Multi-Standard Radio ("MSR") Base Station Equipment Employing E-UTRA FDD, UTRA FDD and GSM/EDGE and Operating in the 850 MHz Band" is available at https://www.ofca.gov.hk/filemanager/ofca/en/content_791/tac004.pdf.

all relevant frequency bands for mobile services in Hong Kong. The proposed revised HKCA 1065 will also replace TAC 004 and TAC 010.

7. Salient points of the proposed revision to specification HKCA 1065 are given below –

(a) the scope is expanded to cover MSR base station supporting NR in addition to E-UTRA, UTRA and GSM;

(b) NarrowBand - Internet of Things ("NB-IoT") [6] is included in the scope for clarity;

(c) the 700 MHz, 850 MHz, 3.3 GHz and 3.5 GHz bands are added to the list of operating frequency bands;

(d) the requirement on unwanted emissions of not exceeding -52 dBm/MHz in the 3700 – 4200 MHz band to protect SMATV systems operating in this band is included; and

(e) reference is drawn to 3GPP TS 37.141, in addition to the ETSI standards.

The proposed revised specification HKCA 1065 is given at the **Annex**.

Certification Requirement

8. Base station equipment for mobile services is classified under the Compulsory Certification Scheme of the Hong Kong Telecommunications Equipment Evaluation and Certification Scheme. Such equipment must be certified before it can be used in Hong Kong.

WTO Notification

9. As the proposed revised specification HKCA 1065 is based on open standards, notification to the World Trade Organisation ("WTO") is not required.

Recommendation

10. It is recommended that the proposed revised specification HKCA 1065 be submitted to the Communications Authority for adoption.

[6] NB-IoT has been included in ETSI EN 301 908-18 since Version 13.1.1.

Advice Sought

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

Office of the Communications Authority
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