

**RADIO SPECTRUM AND TECHNICAL STANDARDS
ADVISORY COMMITTEE**

**Proposed New Conformance Specification
for Radiation Safety of Wireless Devices
and Revision to HKCA 2001
Compliance Test Specification - Safety and Electrical Protection
Requirements for Subscriber Telecommunications Equipment**

Purpose

This paper proposes the adoption of the following HKCA specifications:

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| HKCA 1084 Issue 1 | Conformance Specification for Radiation Safety of Wireless Devices |
| HKCA 2001 Issue 15 | Compliance Test Specification - Safety and Electrical Protection Requirements for Subscriber Telecommunications Equipment |

Background

2. Radiation protection requirements of mobile phones for connection to the public mobile radiocommunications networks are currently specified in HKCA 2001¹. HKCA 2001, which sets out the Specific Absorption Rate (“SAR”) limits to safeguard users from exposure to excessive radio frequency electromagnetic fields, is applicable primarily to mobile phones operating below 6 GHz. In the new fifth generation mobile (“5G”) technology era, some mobile phones capable of supporting frequencies above 6 GHz are available in the global market. In Hong Kong, spectrum in parts of the 24.25 – 28.35 GHz band have been assigned to mobile network operators (“MNOs”) for provision of 5G services. Moreover, parts of the spectrum in the 6.425 – 7.125 GHz band will also be assigned to MNOs for provision of 5G services in Hong Kong in early

¹ HKCA 2001 is available at:
https://www.ofca.gov.hk/filemanager/ofca/en/content_404/hkta2001.pdf

2025. Hence, mobile phones operating above 6 GHz are expected to be widely available in the local market soon. For frequencies above 6 GHz, the industry commonly adopts power density instead of SAR for the measurement of human exposure to electromagnetic fields.

3. With the advent of new advanced wireless technologies, wireless devices for various innovative applications are available nowadays and come in different forms (such as watches and earbuds). The proliferation of wireless devices raised the concern of the public about radiation safety and thus requires a new conformance specification that covers the requirements on radiation safety of wireless devices operating in close proximity to human.

New Standards for Radiation Safety

4. HKCA 2001 specifies the radiation safety limits in terms of SAR by drawing reference to the ICNIRP guidelines for limiting exposure to electromagnetic fields (“ICNIRP Guidelines”) published by the International Commission on Non-Ionizing Radiation Protection, and IEEE Std C95.1 published by the Institute of Electrical and Electronics Engineers (“IEEE”). Both the latest ICNIRP Guidelines published in 2020 and IEEE Std C95.1 published in 2019 specify identical radiation safety limits in terms of SAR for frequencies up to 6 GHz, and power density for frequencies above 6 GHz.

5. Regarding the test methods for SAR compliance, HKCA 2001 refers to IEC 62209-1 and IEC 62209-2 published by the International Electrotechnical Commission (“IEC”), EN 62209-1 and EN 62209-2 published by the European Committee for Electrotechnical Standardization (“CENELEC”), and IEEE Std C95.3. IEC 62209-1 and IEC 62209-2 have been superseded by IEC/IEEE 62209-1528 published by IEC and IEEE, and EN 62209-1 and EN 62209-2 have been superseded by EN IEC/IEEE 62209-1528 published by CENELEC. For IEEE Std C95.3, its reference has been removed from the Code of Federal Regulations in the United States.

6. For the test methods for power density compliance, new standards IEC/IEEE 63195-1 and IEC/IEEE 63195-2 published by IEC and IEEE, and EN IEC/IEEE 63195-1 and EN IEC/IEEE 63195-2 published by CENELEC are available.

Proposed New HKCA 1084

7. In view of the above considerations, the new HKCA 1084 is proposed to cover the radiation safety requirements of wireless devices operating

in any relevant frequency bands and in close proximity to human.

8. Salient points of the proposed new HKCA 1084 are given below –
- (a) the scope covers wireless devices operating in close proximity to human (defined as within 20 cm in the referenced standards);
 - (b) frequencies up to 300 GHz are covered;
 - (c) for technical requirements, reference is drawn to the ICNIRP Guidelines;
 - (d) for evaluation requirements on SAR, reference is drawn to IEC/IEEE 62209-1528 and EN IEC/IEEE 62209-1528; and
 - (e) for evaluation requirements on power density, reference is drawn to IEC/IEEE 63195-1, IEC/IEEE 63195-2, EN IEC/IEEE 63195-1 and IEC/IEEE 63195-2.

The proposed new HKCA 1084 is given at **Annex 1**.

Proposed Revision to HKCA 2001

9. In view of the time required for conformity assessment bodies to obtain accreditation on the new HKCA 1084, it is proposed that a transitional period with expiry on 31 December 2025 would be introduced. During the transitional period, compliance with the existing HKCA 2001 or the new HKCA 1084 will be accepted, while only certification against HKCA 1084 would be accepted with effect from 1 January 2026. To this end, such transitional arrangement should be included in the HKCA 2001. The proposed revised HKCA 2001 is given at **Annex 2**.

Certification Requirement

10. Currently, certification against HKCA 2001 is on a voluntary basis. Similarly, the new HKCA 1084 will also be classified under the Voluntary Certification Scheme of the Hong Kong Telecommunications Equipment Evaluation and Certification Scheme. Certification of wireless devices on HKCA 1084 will be on a voluntary basis, but manufacturers, suppliers and dealers must ensure that their devices comply with HKCA 1084 even if they do not apply for certification.

World Trade Organization Notification

11. As the proposed new HKCA 1084 and the revised HKCA 2001 are based on open standards, notification to the World Trade Organization is not required.

Recommendation

12. It is recommended that the proposed new HKCA 1084 and the revised HKCA 2001 be submitted to the Communications Authority for adoption.

Advice Sought

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

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