



TECHNICAL SPECIFICATIONS

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1. Introduction

The Communications Authority of Kenya (CA), established under the Kenya Information and Communications Act, 1998, is mandated to regulate and promote the development of the telecommunications sector within the country.

In keeping with its regulatory mandate, the Authority acknowledges the critical importance of well-defined technical specifications for mobile cellular devices in supporting broad national objectives such as digital transformation, socio-economic advancement, and integration within the global communications landscape.

The proliferation of mobile cellular devices and the increasing adoption of advanced digital applications have driven the need for mobile devices that meet high standards of functionality, interoperability, and security, ensuring effective connectivity for voice, data, and multimedia services countrywide.

Consequently, the expanding use and diversity of mobile cellular devices requires the Authority to set clear technical standards, enforce compliance with specification requirements, and address related regulatory matters such as device certification, type approval, environmental safety, network compatibility, and alignment with broader national and international policy frameworks.

2. Objectives

These specifications aim to establish clear and comprehensive technical requirements for mobile cellular devices to ensure their safe, reliable, and efficient operation within Kenya's telecommunications networks.

The specific objectives of these technical specifications are to ensure that mobile devices are:

- 2.1. Safe for users by ensuring protection against electrical shock, heat, and explosion during charging or in use.
- 2.2. compliant with national and international radiation exposure limits.
- 2.3. Able to maintain network integrity and optimal performance by enhancing electromagnetic compatibility through limiting their unintentional electromagnetic emissions and ensuring its immunity to interference.
- 2.4. interoperable with existing and future telecommunication networks.
- 2.5. Compliant with applicable environmental standards related to device manufacturing, use, and disposal.

3. Scope

- 3.1. This Specification defines the minimum technical requirements for Mobile Cellular devices that utilize mobile network technologies.
- 3.2. Mobile cellular devices include, smartphones, feature phones, tablets.

4. Technical Specifications

The developed specifications for mobile devices in the country cover input power, safety issues, electromagnetic compatibility (EMC), radiated power, frequency utilization and environmental issues.

The minimum requirement for each specification are:

4.1. Power Requirements

- 4.1.1. The battery for a mobile cellular device should provide a minimum of eight (8) hours of talk-time and at least twenty-four (24) hours of standby time.
[GSM Association, Technical Specification (GSMA) TS.09]
- 4.1.2. Where a device is sold with a power plug, the plug shall conform to the "Type G" standard, 3-pin plug used in Kenya
[Kenya Standard (KS) 546:1974].
- 4.1.3. Where the device is sold with a power plug that is not 3-pin, an adapter to convert the non 3-pin to 3-pin shall be included .
- 4.1.4. The mobile cellular device shall support an operating voltage of 240 Vac \pm 10% at a frequency of 50 Hz \pm 1, which corresponds to the standard voltage and frequency used in Kenya.
[Kenya National Distribution Grid Code, 2024]
- 4.1.5. The charging solution shall be such that the charging cable is detachable from the power adapter
[International Telecommunication Union-Telecommunications Sector (ITU-T) Recommendation L.1000]
- 4.1.6. The charging solution for mobile cellular device shall be USB Type-C
[European Union (EU) Directive (EU) 2022/2380]

4.2 Frequency

- 4.2.1 The mobile cellular device shall support frequency bands designated for 2G(GSM), IMT-2000 (3G), IMT-Advanced (4G) and IMT-2020 (5G) and future generations as allocated at the ITU.
- 4.2.2 Other features supported that require frequency shall be in line with the Kenya National Table of Frequency Allocations (TOFA).

4.3 RF Output Power

- 4.3.1 The RF output power limits for cellular phones and the associated technologies are :

Technology	Frequency Band	RF Output Power Limit	Standard
2G GSM	900 MHz	2 W	ETSI EN 300 910 (European Telecommunications Standards Institute-European Norme)
2G GSM	1800 MHz	1 W	
3G UMTS	2100 MHz	250 mW	ETSI TS 125 101 (ETSI Technical Specification)
4G LTE	Various bands	200 mW	3GPP TS 36.101 (Third (3 rd) Generation Partnership Project)
5G NR	Various bands	200 mW	3GPP TS 38.101

4.4 Safety

- 4.4.1 Access to energized parts of the mobile device and their insulation shall be restricted [International Electrotechnical Committee (IEC) 60950-1]
- 4.4.2 For mobile device with replaceable batteries, there shall be a marking close to the battery slot that warns of possible risk explosion if wrong battery type is used. [International Electrotechnical Committee (IEC) 60950-1]
- 4.4.3 Materials used in the manufacture of mobile device components shall be such that they do not exceed the set safe temperature limits [International Electrotechnical Committee (IEC) 60950-1]

4.5 Radiated Emissions

4.5.1 The radiated emission limits for mobile phones, for both Open Area Test Sites (OATS)/Semi anechoic Chamber (SAC) , and Fully Anechoic Room (FAR) shall be:
[EN55032:2015]

4.5.1.1 At 10m for (30–230) MHz, 30 dB μ V/m OATS/SAC facility,32 dB μ V/m FAR facility.

4.5.1.2 At 3m for (30–230) MHz, 40 dB μ V/m at OATS/SAC facility, 42 dB μ V/m at FAR facility.

4.5.1.3 At 10m for (230-1000) MHz, 37 dB μ V/m at OATS/SAC facility, 32 dB μ V/m at FAR facility

4.5.1.4 At 3m for (230-1000) MHz, 47 dB μ V/m at OATS/SAC facility, 42 dB μ V/m at FAR facility

4.6 Conducted emissions

4.6.1 The conducted emissions from mobile cellular phones to the mains port shall range between (50-66) dB μ V
[International Special Committee on Radio Interference (CISPR) 22]

4.6.2 The conducted emissions from mobile cellular phones to the telecommunications port shall range between (20-30) dB μ V
[International Special Committee on Radio Interference (CISPR) 22]

4.7 Specific Absorption Rate (SAR)

4.7.1 The specific absorption rate (SAR) from mobile cellular phones shall not exceed the set limits of:
[Council Recommendation 1999/519/EC]

4.7.1.1 head and trunk averaged over 10grams of tissue at 2.0 W/kg

4.7.1.2 Limbs averaged over 10grams of tissue at 4.0 W/kg

4.7.1.3 Whole body averaged over 10grams of tissue at 0.08 W/kg

4.8 RoHS (Restriction of Hazardous Substances)

4.8.1 Materials used in the manufacture of Mobile cellular phones and accessories shall not contain elements of Lead, Mercury, Cadmium and any other hazardous substance.
[Directive 2011/65/EU]

4.9 Accessibility


4.9.1 The mobile cellular devices must support accessibility requirements for persons with disabilities, detailed as:

[Kenya Standard KS 2952]

- 4.9.1.1 Devices shall support users with limited or no vision through features such as speech output, text-to-speech conversion, tactile or haptic feedback, non-visual navigation cues, adjustable text size and spacing, high-contrast display modes, magnifier functionality, and screen reader compatibility
- 4.9.1.2 Devices shall support users with limited or no hearing through features such as visual notifications, text displays for audio content, vibration alerts, captioning options, audio amplification, adjustable frequency response, and real-time captioning
- 4.9.1.3 Devices shall support usage with no or limited vocal capability through text input methods, gesture controls, and keyboard-based alternatives to voice commands.
- 4.9.1.4 Devices shall support usage with limited manipulation or strength through large touch targets, simple gesture requirements, keyboard-only navigation, and one-handed operation modes.
- 4.9.1.5 Devices shall provide interoperability with assistive technologies including screen readers , voice recognition, and refreshable braille displays.
- 4.9.1.6 Devices shall support Real-Time Text (RTT) for messaging, visible Caller ID, alternatives to voice-only services, and access to emergency services without barriers.

5 Review of Specification

This Specification shall be reviewed periodically to align with emerging technologies, best practices, and consumer trends.


Director General
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