

Information technology — learning, education and training — Computer hardware intended for eLearning — Specification

Part 1.3

Tablet computer

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**Part 1.3
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DKS 2416-1.3: 2023

Foreword

This Kenya Standard was prepared by the Technical Committee on Information Technology for Learning, Education and Training under the guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

Since early 2020 when the pandemic disrupted learning globally, education systems have rolled out emergency remote learning strategies at an unprecedented scale. Studies have shown that remote learning requires three complementary elements: effective teachers, suitable technology, and engaged learners.

Kenya stands to gain tremendously by fully digitizing its educational system, now and even post Covid-19 crisis. Decision-making at the policy-making level will significantly improve thanks to data analytics capabilities that global tech partners bring to the table

The Digital Literacy Programme (DLP) that has currently earned a brand name “DigiSchool” was borne out of the Government’s vision to equip pupils with relevant skills needed in today’s digital world. It is pertinent that all the target schools be connected to power grid before and quality devices that can last for a long time should be procured and distributed to the schools

Many schools continue to face challenges as they take steps to transform their delivery models to extend and deepen student learning, while integrating use of the technology. Planning for online learning should be closely aligned with its technology infrastructure investments and its school improvement planning process.

As such, KS 2416 is a multi-part standard intended to set minimum requirements for ICT infrastructure intended for learning education and training (eLearning) under the general title, Information Technology — Learning, Education and training —

This part 1.2 of KS 2416 defines the minimum requirements for laptop computers to establish a solid technical platform for efficient delivery. This Second edition of the standard cancels and replaces KS 2416-1.3:2016 that has been technically revised. The following subparts have been developed to define minimum requirements for computer hardware intended for eLearning:

- Part 1.0 — Terms and definition
- Part 1.1 — Desktop Computers — Specification
- Part 1.2 — Laptop Computers — Specification
- Part 1.3 — Tablet Computers — Specification
- Part 1.4 — Servers — Specification

Part 2 of KS 2416 specifies the minimum requirements for application software intended for on-line learning. Applications software for learning, education and training includes tools and systems that can be used alone or in combination to implement a computer-based learning program

Part 3 of the standard specifies the minimum network requirements to support e-Learning.

KS 2416 Part 4 specifies the minimum requirement for computer peripherals necessary to support the effective use of IT in Learning, Education and Training

During the preparation of this standard, reference was made to the following documents:

Non-proprietary performance description of Desktop PCs, Guideline, version 3.4, BITKOM.
Non-proprietary procurement specifications notebooks, Guideline, version 2.1, BITKOM.
www.bapco.com

Acknowledgement is hereby made for the assistance derived from these sources.

Information technology — Learning, education and training — Computer hardware intended for eLearning — Specification

Part 1.3:

Tablet computer

1 Scope

1.1 This Kenya Standard specifies the minimum requirement for tablet computers necessary to support the effective use of IT in Learning, Education and Training (IT LET).

It defines the technical requirements for hardware devices that any computer-based, web-based or online learning program must implement to establish a solid technical platform for efficient delivery.

1.2 IT LET applies to:

- i) online and digital teaching and training resources
- ii) social, collaborative and content creation applications
- iii) virtual classrooms and communication tools
- iv) audio and/or video player

2 Normative references

The following referenced documents are indispensable for the application of this Kenya Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

KS 2880 — Information technology equipment — Computers — Minimum Energy Performance Standards (MEPS) Part 1: Specification.

KS 2879 — Information technology equipment — Minimum Energy Performance Standards — Computer monitors Part 1: Performance and energy rating requirements

KS 2416-1.0, Information technology — Learning, education and training — Part 1: Terms and definitions

KS 2416-2, Information technology — Learning, education and training — Part 2: Software intended for eLearning

IEC TS 62393: 2005, Portable and hand-held multimedia equipment — Mobile computers — Battery run-time measurement

KS ISO 2382-36, Information technology vocabulary Part 36: Learning education and training

KS IEC 60950-1 Information technology equipment — Safety — Part 1: General requirements

ISO IEC 11889, Information technology -- Trusted Platform Module

KS EAS 495-1:2008, 13 A plugs, socket-outlets, adaptors and connection units

3 Terms and definitions

For the purposes of this standard, the definitions in part 1.0 of this standard shall apply.

Additionally, ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at <http://www.electropedia.org/>

— ISO Online browsing platform: available at <http://www.iso.org/obp>

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4 Requirements

4.1 General requirements

The following measures shall be taken before importing or exporting into/from Kenya any such appliances to facilitate the import compliance checking where applicable:

Table 1 — General requirements for Tablets intended for eLearning

| | Property | Requirement | Verification |
|-------|-------------------|---|---|
| 4.2.1 | Safety | <p>The equipment meets all the applicable technical and safety standards required in Kenya</p> <ul style="list-style-type: none"> ▪ KS ISO IEC 60950, Information technology Equipment — Safety — General requirements | Pre-shipment verification Certificate of conformance (COC) |
| 4.2.2 | Energy efficiency | <p>KS 2880 — Information technology equipment — Computers — Minimum Energy Performance Standards (MEPS) Part 1: Specification.</p> <p>KS 2879 — Information technology equipment — Minimum Energy Performance Standards — Computer monitors Part 1: Performance and energy rating requirements</p> | Pre-shipment verification Certificate of conformance (COC) |
| 4.2.3 | Eco-labeling | <p>i) The following Information appearing on the Eco label where necessary</p> <ul style="list-style-type: none"> ▪ High energy efficiency ▪ designed to facilitate recycling repair and upgrading ▪ Mercury-free backlights | The importer shall declare the compliance of the product with this requirement, and shall provide a copy of the Eco-label |
| 4.2.4 | Toxic reduction | <p>i) Does not contain prohibited substances as outlined in the Kenya National Environmental regulations</p> | RoHS Compliance certificate |
| 4.2.5 | Primary packaging | <p>i) Where cardboard boxes are used, they shall be made of, at least, 80 % recycled material.</p> <p>ii) Where plastic bags are used for the final packaging, they shall be made of, at least, 75 % recycled material or they shall be biodegradable or compostable.</p> | A declaration of compliance with this requirement and a sample of the packaging |
| 4.2.6 | user instructions | <p>ii) The equipment shall include relevant user information that provides advice on its proper environmental use</p> <p>iii) The following information shall be included in the user manual:</p> <ul style="list-style-type: none"> ▪ Energy consumption ▪ Information on how to reduce power consumption ▪ Information on where to obtain professional repairs and servicing ▪ End-of-life instructions | User manual in either soft or hard copy in official languages |
| 4.2.7 | Warranty | <p>i) At least 1 year warranty and shall be provided by importer or manufacturer</p> | Warranty document provided by importer or manufacturer |

4.2 Functional/technical requirements

Functional specifications for **tablet** computers shall be as defined in Table 1 and Table 2.

Table 2 — Minimum Functional requirements for tablet computers

| | Hardware property | Minimum requirement |
|--------------|---------------------------------|---|
| 4.2.1 | Display | |
| i) | Display size in inches | 7 inch, 10-point multi-touch capacitive screen |
| ii) | Display resolution | 1280 x 800 pixels |
| iii) | Weight in kg | 1.5 Kg (Max) |
| 4.2.2 | Performance | |
| i) | Processor Technology | Industry approved benchmarks for performance |
| ii) | Memory size (RAM) | 4GB of RAM |
| 4.2.3 | Storage/Secondary memory | |
| i) | Size/ Capacity | 32 GB (Either internal or an expandable memory) |
| 4.2.4 | Network Interface | |
| i) | Bluetooth | 4.0 |
| ii) | WLAN/Wi-Fi | KS ISO IEC IEEE 8802-11 |
| 4.2.5 | Interfaces | |
| i) | Sound | 3.5 mm jack |
| ii) | Camera | <ul style="list-style-type: none"> ▪ 2megapixel front facing ▪ 5-megapixel rear-facing camera |
| 4.2.6 | Power | |
| i) | Battery | <ul style="list-style-type: none"> ▪ 8 hours (minimum)when tested in accordance with KS IEC TS 62393 |
| ii) | Power supply | <ul style="list-style-type: none"> ▪ Mains side 220-240 V ▪ 50-60 Hz |
| iii) | Power plug | Conforms to requirements of KS EAS 495-1:2008 |

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4.3 Additional requirements for Tablets intended for lower primary education.

Table 3 — Additional requirements for lower Primary education

| SL/No. | Property | Specification | Test method and recommendations |
|--------|-----------------|---|--|
| 4.3.1 | Durability | i) easy-to-clean and dust dustproof ii) Durable chassis | Drop test when dropped from a minimum height of 70 cm no part of the tablet shall break or come dismantled |
| 4.3.2 | Mobility | It shall have built in handle or carrying case with a handle for easy portability | The handle/ carrying case shall be made of durable material easily cleaned Define strength of material, |
| 4.3.3 | Device security | theft deterrent capability | The theft deterrent capability should provide remote security and manageability features |
| 4.3.4 | OS & Software | If software pre-installed it shall conform to requirements for software intended for learning, Education and training | As specified in KS 2416- 2 |

5 Recycling and disposal of obsolete equipment

When ICT equipment reaches its end-of-life it shall be recycled or disposed of in the following ways:

5.1 In accordance with standards, laws and regulations specified by the Kenya Government. This may include guidelines provided by the National Environmental Management Authority (NEMA) and any other applicable regulations.

5.1 Through asset management and recovery programmes within the institution.

5.2 By contacting your computer supplier or retailer and request information on their recycling schemes, leasing and take back option

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