ETHIOPIAN STANDARD

ES 7101:2024

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Ethiopay – Contactless/Dual Interface Payment Card Scheme-Requirement

ICS: XX.XX
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Foreword

This Ethiopian Standard has been prepared under the direction of Technical Committee for Financial services (TC 107) and published by the Institutes of Ethiopian Standards (IES).

In preparing this Ethiopian Standard reference has been made to the following:

Acknowledgement is made for the use of information from the above publication.

Ethiopay – Contactless/Dual Interface Payment Card Scheme-Requirement

1. Scope

This Ethiopian standard specifies the layout and profile requirements for contactless/dual interface payments card scheme.

2. Normative reference

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

ES ISO 3166-1 Codes for the representation of names of countries and their subdivisions– Part 1: Country codes

ES ISO 7810 Identification cards – Physical characteristics

ISO 7816 Identification cards — Integrated circuit cards

ISO 14443 Identification cards – Contactless/ dual interface integrated circuit cards - Proximity cards

ES ISO/IEC 7812 – 1 specifies a numbering system for the identification of the card issuers, the format of the issuer identification number (IIN), and the primary account number (PAN).

ISO/IEC 18092 Information technology — Telecommunications and information exchange between systems — Near Field Communication — Interface and Protocol (NFCIP-1)

ES ISO/IEC 15408 Information technology — Security techniques — Evaluation criteria for IT security

3. Terms and definitions

For the purpose of this Ethiopian standard, the following definition shall apply.

3.1.

Card scheme

One or more payment networks are linked to payment cards of which a financial institution becomes a member. It includes the card profile, card issuing and acquiring standard.

3.2.

Card profile

a set of configuration that define how the card behaves which includes security features, transaction behavior and network compatibility

3.3.

Individual account number

A number assigned by the card issuer for the purpose of identifying an individual account

3.4.

Card issuer

Institution (or its agent) that issues the card to the cardholder

3.5.

Card

a payment card that has a contactless only or dual interface defined by a payment system

3.6.
Debit card
a physical card that can be used as a method of payment; which is issued by the financial institutions where a customer has an account

3.7.
Acquirer
an entity that owns and operates payment channels and enters into an agreement with financial institutions, merchants, switch processors, or providers of card scheme

3.8.
Common Core Definitions
(CCD)
a minimum common set of card application implementation options, card application behaviors, and data element definitions sufficient to accomplish an EMV transaction.

3.9.
Financial Institution
a bank, microfinance institution, insurance company, reinsurer, payment instrument issuer, payment system operator, money transfer institution, postal saving, or such as similar institutions as may be determined by the national bank

3.10.
Europay, MasterCard, Visa
(EMV)
a payment method based on a technical standard for smart payment cards and for payment terminals and automated teller machines which can accept them.

3.11.
Integrated circuit card
(ICC)
a card into which one or more integrated circuits are inserted to perform processing and memory functions

3.12.
Dual Interface Card
a type of Contactless Payment Device, with contact and contactless interfaces.

3.13.
Bank Identification Number
(BIN)
a unique number used to identify the card's issuing financial institution

3.14.
Primary Account Number
(PAN)
a unique identifier designated on cards for a primary account

3.15.
Common Payment Application Contactless Extension

(CPACE)

granted to a card product with an embedded CPACE application, the CPACE approval process attests to the compliance of the card application to the EMV CPACE Specification

3.16.
Kernel
The Kernel implements interface routines, security, and control functions necessary to carry out a contactless/ dual interface transaction. It manages a set of commands and responses to retrieve data from the card.

3.17.
Contactless card
a process of executing a payment or transaction by presenting a card to pay without physical contact between the card and card reader device

3.18.
Ethiopay
a domestic card scheme that serves all banks in Ethiopia to ensure and acquire payment cards. It defines rules for routing of payment authorizations and settlements between merchant acquirers and card issuers

4. General Requirements

4.1.1. Ethiopay payment cards shall have a primary account number (PAN) that complies with ES ISO/IEC 7812 – 1.

4.1.2. BIN assignment for financial institutions shall follow the chronological order of the date of request.

4.1.3. The data structure of all Integrated Circuit (IC) chips on contactless/ dual interface cards shall comply with the EMV specifications.

4.1.4. The contactless/ dual interface chip shall have an antenna.

4.1.5. The common standard application for Ethiopay contactless/ dual interface cards shall comply with EMV Common Payment Application Contactless Extension (CPACE).

4.1.6. Integrated Circuit chips shall comply with EMV Common Core Definitions (CCD) for payment card application.

4.1.7. The payment card should support Near Field Communication (NFC) technology or other verified contactless/ dual interface communication protocols.

4.1.8. The personalization of Ethiopay payment cards shall comply with EMV Card Personalization Specification (CPS).

4.1.9. Financial institutions shall implement EMV CPS-compliant card products.

4.1.10. The card design shall comply with the common layout for Ethiopay payment cards.

4.1.11. The card branding and Co-branding shall be directed by regulatory body.

4.1.12. The acquiring devices shall be certified for Ethiopay contactless/ dual interface and dual interface cards.

4.1.13. The contactless/ dual interface cards shall comply with EMV security and key management specifications.

4.1.14. The payment card product should be environmentally friendly.

4.1.15. The payment card product shall comply with national cyber security regulation.

4.1.16. Physical characteristics of the card shall comply with ES ISO/ IEC 14443-1.

5. Specific Requirements

5.1. The contactless/ dual interface payment card shall comply with the following specific requirements.

5.1.1. Numbering System

5.1.1.1. Primary Account Number(PAN)

Table 1: The Primary Account Number (PAN) of all Ethiopay payment cards shall contain 19 (nineteen) digits and comply with the following arrangement.

Digit sequence	Description
First Digit	9 is for national assignment as per ES ISO/IEC 7812 -1
Second to Fourth Digits	231 is the code of Ethiopia as per ES ISO 3166-1
Fifth Digit	4 is assigned for Financial Institutions as per ES ISO/IEC 7812 -1
Sixth and Seven Digits	Identify financial institutions
Eighth and Nine Digits	Identify Card Products by the respective financial institutions
Tenth to Eighteenth Digits	Identify Account Numbers by the respective financial institutions.
Nineteenth Digit	Check digit

5.1.1.2. Bank Identification Number (BIN)

5.1.1.2.1. The first seven digits of a primary account number shall be Bank Identification Number (BIN).

5.1.1.2.2. BIN assignment for financial institutions shall be from 9231401 up to 9231499.

5.1.2. Card Application

5.1.2.1. The card application shall comply with EMV integrated circuit card(ICC) and ISO/IEC 14443 series.

5.1.3. The CPACE Terminal Kernel

5.1.3.1. Terminal Kernel shall be implemented according to Common Payment Application Contactless Extension(CPACE) Terminal Kernel functional specification

5.1.4. Security

5.1.4.1. The card and terminal communication shall comply with ES ISO/IEC 18092.

5.1.4.2. The physical card should comply with ES ISO/IEC 15408 series.

5.1.4.3. The contactless/ dual interface cards shall comply with PCI DSS (Payment Card Industry Data Security Standard) and EMV security.

5.1.4.4. The contactless/ dual interface cards should comply with PCI SSF (Payment Card Industry Software Security Framework).

5.1.5. Ethiopay Card Design

5.1.5.1. The card dimension shall be 85.6mm from its top to bottom edges and 54mm from its left to right edges.

5.1.5.2. Front side dimension of the card shall comply with the following requirements

a) The issuer financial institution's logo and name shall be printed on top of edge of the card at the maximum space of 11mm length and 79.6mm width.

b) There shall be a minimum of 3mm space on the left and right sides of the issuer financial institution’s name and logo.

c) The issuer financial institutions should print the co-brand logo and/or name or the financial institution's slogan on a maximum space of 11mm length and 60mm width, at the bottom right side space of the issuer logo and name.

d) There shall be a minimum of 3mm empty space on the right side of the co-brand logo / name or slogan

5.1.5.3. The contactless wave symbol shall be displayed on the right side of the co-brand logo / name or slogan.

5.1.5.4. On the left edge, at the center of the card from top to bottom, the triangular shape showing the direction of insertion of the card into ATM/POS shall be printed.

5.1.5.5. The phrase “VALID THRU (Valid Through)” shall be printed starting from 24mm from the left edge, right after 12mm from the bottom edge of the card.

5.1.5.6. The word “Month/Year” shall be printed at the center between the left and right edges of the card right after 15mm from the bottom edge of the card.

5.1.5.7. The “EthioPay” logo shall be printed in a 20.5mm width and 9.75mm length border-lined box at the right bottom corner side of the card 5mm above the bottom edge and 3mm from the right edge of the card.

5.1.5.8. The sub-brands “DEBIT, CREDIT, PREPAID or other card products” shall be printed on the space adjacent to the bottom center of the “EthioPay” logo, 3mm above the bottom edge of the card.

5.1.5.9. Back side dimension of the card shall comply with the following requirements

a) The card shall bear the phrase “Valid only in Ethiopia”

b) The phrase “Valid only in Ethiopia” shall be printed at the center of the 3mm space from top edge of the card

c) The phrase “Authorized Signature” shall be printed after 16mm from top edge and 3mm from left edge of the card.

d) The phrase “Not valid unless signed” shall be printed at the center of the card after 16mm from top edge.

e) The statement “By using this card the holder agrees to all the terms under which it was issued. In the event the card is lost or stolen, contact your branch or customer service center." shall be printed on 56mm width and 8mm length space located next to 32 mm from top edge and 3mm from left edge of the card.

f) The phrase "Contact center , customer service telephone number" of financial institutions shall be printed on 18mm width and 8 mm length space located next to 32 mm from top edge and 3mm from right edge of the card.

g) The card manufacturer and product name shall be printed on 3mm space from right edge and the center from top to bottom edges of the card.

h) If the card also works with an International Card Scheme (ICS), the ICS logo shall be printed on 20.5mm width and 11mm length space located on the bottom left side of the card, 3mm from left edge and 6mm from bottom edge of the card.

i) If the ICS logo is printed the phrase "Valid only in Ethiopia" on the front top of the card shall not be printed.

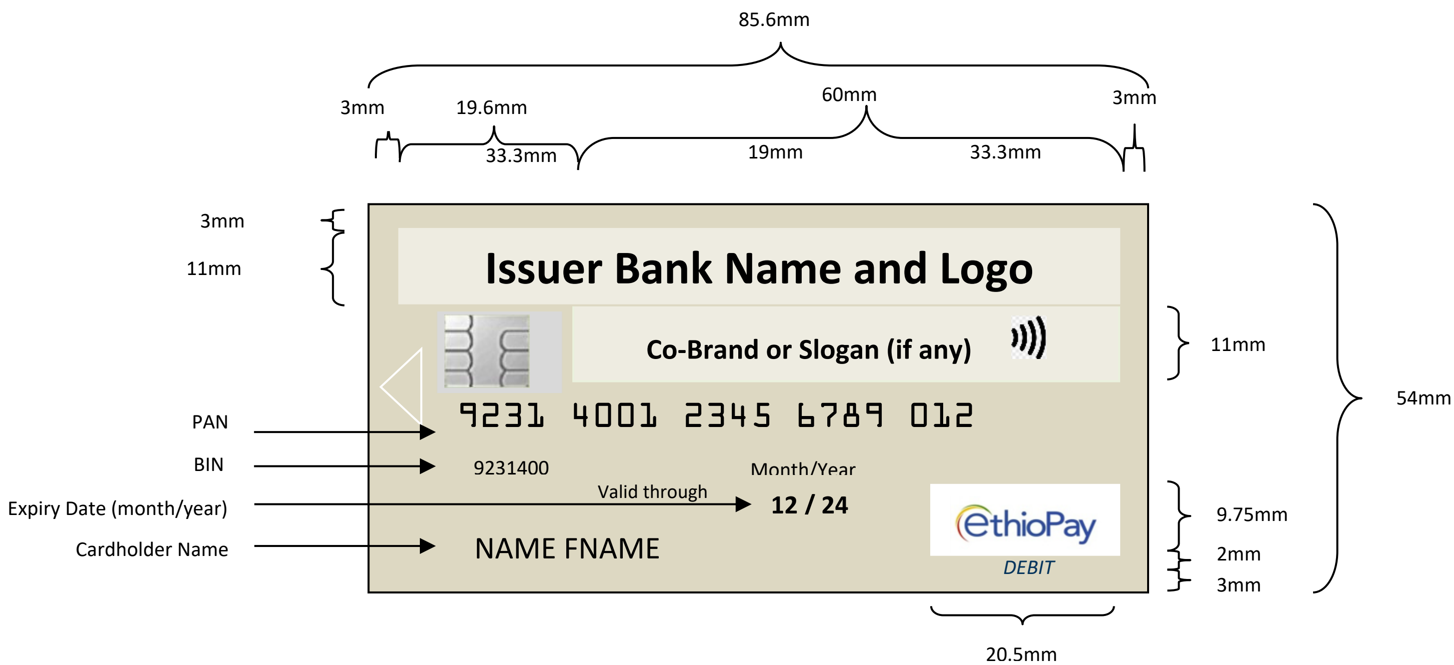
j) If hologram is added to the card it shall be located on the 21mm width and 16mm length space on the bottom right side of the card, 3mm from the right edge and 3mm from bottom edge of the card.

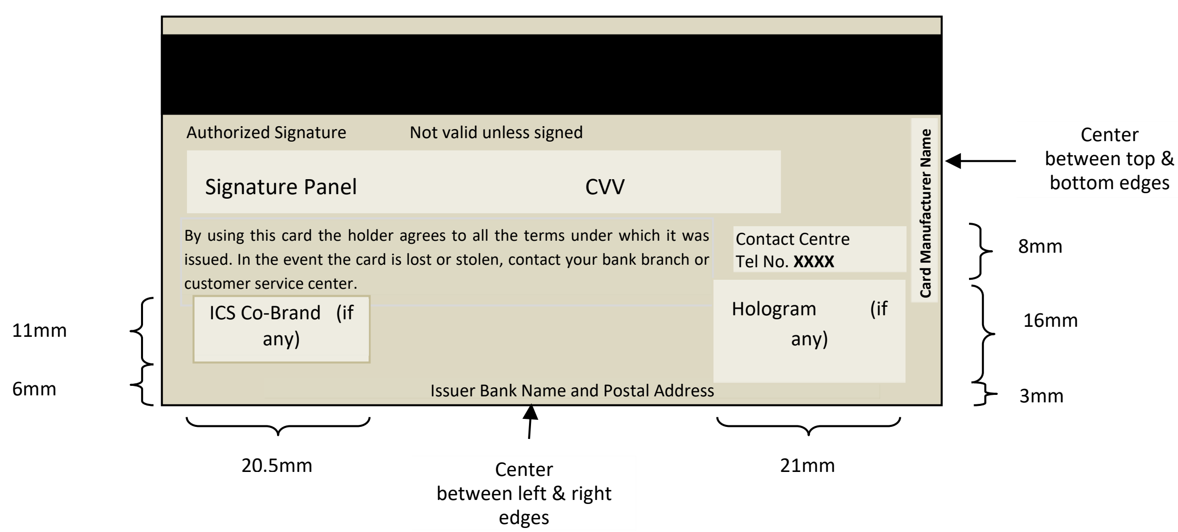
k) The issuer financial institutions name and postal address shall be printed at the center of the 3mm space from bottom edge of the card.

Annex A

(Normative)

Common layout design of contactless/dual interface payment card





Organization and Objectives

The Institute of Ethiopian Standards (IES) is the national standards body of Ethiopia. IES is re-named by the proclamation number 1263/2021, from Ethiopian Standards Agency (ESA) to Institute of Ethiopian standards, with the mandate given by the regulation Number, 193/2010 and proclamation number, 1263/2021.

IES's objectives are፡

- ❖ Develop Ethiopian standards and establish a system that enable to check whether goods and service are in compliance with the required standards,
- ❖ Facilitate the country's technology transfer through the use of standards,
- ❖ Develop national standards for local products and services so as to make them competitive in the international market.
- ❖ Conduct standards related research and provide training and technical support.

Ethiopian Standards

The Ethiopian Standards are developed by national technical committees which are composed of different stakeholders consisting of educational and research institutes, governmental organizations, certification, inspection, and testing organizations, regulatory bodies, consumer association etc. The requirements and/ or recommendations contained in Ethiopian Standards are consensus based that reflects the interest of the TC representatives and also of comments received from the public and other sources. Ethiopian Standards are approved by the National Standardization Council and are kept under continuous review after publication and updated regularly to take account of latest scientific and technological changes.

Orders for all Ethiopian Standards, International Standard and ASTM standards, including electronic versions, should be addressed to the Documentation and Publication Team at the Head office and Branch (Liaisons) offices). A catalogue of Ethiopian Standards is also available freely and can be accessed from our website.

 International Involvement IES, representing Ethiopia, is a member of the International Organization for Standardization (ISO), International Electro-technical Commission (IEC) and Codex Alimentarius Commission (CODEX). It also maintains close working relations with the American Society for Testing and Materials (ASTM). It is a founding member of the African Regional Organization for standardization (ARSO).

For More Information?

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