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Technical specification for authentication capability of RMB cash authentication machines

人民币现金机具鉴别能力技术规范

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Foreword

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard was proposed by People's Bank of China Currency Bullion Bureau.

This Standard shall be under the jurisdiction of National Technical Committee on Finance of Standardization Administration of China (SAC/TC 180).

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Technical specification for authentication capability of RMB cash authentication machines

1 Scope

This Standard specifies the technical requirements, test methods and inspection rules for authentication capability of RMB cash authentication machines.

This Standard is applicable to cash authentication machines with RMB authentication capability, including banknote authentication machine and coin authentication machine.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1 banknote

printed, circulating currency issued by the People's Bank of China and printed on the basis of specific substrates

2.2 coin

circulating currency issued by the People's Bank of China on the basis of metal or other synthetic materials

2.3 forged currency

counterfeit, altered currency

2.4 cash authentication machine

cash-based processing equipment with true and false authentication functions, including banknote identification machines and coin identification machines

2.5 banknote authentication machine

a cash machine for processing banknotes, including authentication machine processing batches of banknotes and authentication device processing single banknote

2.6 authentication machine processing batches of banknotes

2.23 coin sample for specific test

a coin sample for one or more machine read anti-counterfeiting feature design, designed and produced by the People's Bank of China, used for the identification ability test of coin authentication machine

2.24 test coin counterfeit

a test forged coin collected, appraised and organized by the People's Bank of China, used for the identification ability test of coin authentication machine

2.25 coin sample for discriminating test

a set of test coins selected from samples for specific test and test counterfeit, used for tests of unread discrimination rate and misread discrimination rate of coin authentication machine

2.26 discriminating speed

the working speed of the cash machine when all authentication functions are turned on

2.27 unread discrimination rate

the ratio of the number that the device continues operating within a specified time, checks a specified number of banknote samples or coin samples, identifies the test banknote or the test coin as genius TO the actual inventory number of differential test samples or the number of coin samples for discriminating test

2.28 misread discrimination rate

the ratio of the number that the device continues operating within a specified time, checks a specified number of samples or coin samples, identifies true currency as forged currency TO the number of actual count of true currency

2.29 reject rate

that ratio of the number of banknote sample or coin sample that the device continues operating within a specified time, checks a specified number of samples or coin samples, is unable to provide identification results TO the number of actual inventory of test samples or test coins

2.30 serial number misread rate

the ratio of the number of misunderstood serial number characters TO the number of actual read characters

2.31 dimension

optical characteristics of the security thread or film generated during printing process of the banknotes

2.41 fine demetallized image

fine patterns and texts with hollow effect that are generated under the perspective conditions during printing process of the banknotes

2.42 electrical feature

characteristics with electrical response that are generated during printing process of banknotes

2.43 optical absorption feature

absorption characteristics of light of different spectra that are generated during printing process of banknotes

2.44 transparent window

characteristics that are generated during printing process of banknotes, visible with naked eyes, with transparent window effect

2.45 watermark

patterns or texts that can be seen in the substrate when viewed from light, are generated during printing process of banknotes

2.46 serial number

serial number printed on the surface of the banknote, generated during printing process of banknotes

2.47 thickness

variation of banknote thickness generated during printing process of banknotes

2.48 coin surface design

an integration of coin surface pattern, text, year and denomination figures, etc.

2.49 coin edge design

an integration of Coin border pattern, text, etc.

2.50 micro text on coin

a small graphic made on the face of a coin pattern

2.51 latent image on coin

according to the format prescribed by the People's Bank of China. It shall have the function to upload test results directly or indirectly over Ethernet.

6 Test methods for discriminating ability of banknote authentication machine

6.1 Test preparation

6.1.1 Test banknote

The banknote types used for testing are in accordance with Table A.1.

6.1.2 Sample for specific test

The types of sample for specific test used for testing are in accordance with Table A.2.

6.1.3 Test counterfeit

The types of test counterfeit are in accordance with Table A.2.

6.1.4 Sample for discriminating test

The sample for discriminating test is selected from the sample for specific test and test counterfeit.

6.2 Discriminating speed test

In the state that all the discriminating functions are all turned on, a total of 1800 pieces of ¥100 banknotes shall be returned to test. Test the discriminating time. Record the results. Calculate the discriminating speed according to equation (1).

$$V_j = \frac{z}{t} \dots\dots\dots (1)$$

Where,

V_j - discriminating speed, in pieces per minute (pcs/min);

z - number of discriminating pieces, in pieces;

t - discriminating time, in minutes.

6.3 Single-item discriminating ability test

Zwj - number that the authentication results cannot be provided, in pieces;

Zsc - actual number of samples tested, in pieces.

7 Test methods for discriminating ability of coin authentication machine

7.1 Test preparation

7.1.1 Test coin

The coin types used for testing are in accordance with Table B.1.

7.1.2 Coin sample for specific test

The types of coin sample for specific test used for testing are in accordance with Table B.2.

7.1.3 Test coin counterfeit

The types of test coin counterfeit are in accordance with Table B.2.

7.1.4 Coin sample for discriminating test

The coin sample for discriminating test is selected from the coin sample for specific test and the test coin counterfeit.

7.2 Discriminating speed test

Under the normal working state when all authentication functions are turned on, a total of 1800 pieces of coins in the fifth set of one-corner coins shall be used for the test. Test the discriminating time. Record the results. Calculate the discriminating speed according to equation (6).

$$V_j = \frac{m}{t} \dots\dots\dots (6)$$

Where,

Vj - discriminating speed, in pieces per minute (pcs/min);

m - discriminating quantity, in pieces;

t - discriminating time, in minutes.

7.3 Single-item discriminating ability test

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