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**YD**

**TELECOM INDUSTRY STANDARD  
OF THE PEOPLE'S REPUBLIC OF CHINA**

**YD/T 514-1998**

Replacing YD 514-92

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**Technical requirements and test methods for  
interface between non-voice subscriber terminal  
and public telephone network**

**非话用户终端设备与公用电话网接口  
技术要求和测试方法**

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## Foreword

With the digitization of telephone network, the multi-functionalization of non-voices terminal and the requirements for electric safety are strengthened constantly. There are such needs to constantly modify and improve the communication industry standard. This Standard is formulated after modifying the noise power, output power level limits, electric safety and other indicators in 1992 version (YD 514-92) according to the *General Technical Specification on Telephone Switching Equipment of Ministry of Posts and Telecommunications*.

This Standard was proposed by and shall be under the jurisdiction of the Scientific Research and Planning Institute of Ministry of Posts and Telecommunications.

The Research Institute of Telecommunication Transmission of Ministry of Posts and Telecommunications was responsible for drafting this Standard.

Drafters of this Standard: Liu Huadong, Yang Zemin, and Han Guojie.

The Communication Industry Standard of the People's Republic of China

**Technical requirements and test methods for interface  
between non-voices subscriber terminal  
and public telephone network**

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## 1 Scope

This Standard specifies the electric safety standard for accessing network, test methods and interface parameters of connection BETWEEN public telephone network AND various non-voices subscriber terminal which use ordinary telephone circuit as transmission media.

This Standard can be served as the basis for the design, manufacturing, maintenance and measurement of the interface that connects the non-voices subscriber terminal to the subscriber line of public telephone network.

## 2 Normative references

The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. At the time of publication, the editions indicated are valid. All standards are subject to revision. The parties who are using this Standard shall explore the possibility of using the latest version of the following standards.

YD/T 965-1998 The safety requirement and test method for telecommunication terminal equipment

GB 1002-1996 Types, basic parameters and dimensions of single phase plugs and sockets

GB 2099-1996 Plugs and socket-outlets for household and similar purposes

### 3 Definitions

#### 3.1 Non-voices subscriber terminal

It refers to the telecommunication device connecting to the subscriber line in telephone network for information communication other than telephone

#### 3.2 Terminals of line A and B

The terminals connecting the non-voices subscriber terminal and the subscriber line of telephone network

#### 3.3 “On-hook” state

It refers to the working condition that the non-voices subscriber terminal cooperates with the telephone exchange network. When it is under the “on-hook” state, the non-voices subscriber terminal produces a high impedance to the telephone network. And it cuts off the DC circuit, so as to restore the device in local network.

#### 3.4 “Off-hook” state

It refers to another working condition that the non-voices subscriber terminal cooperates with the telephone exchange network. When it is under the “off-hook” state, the non-voices subscriber terminal closes the DC circuit, so as to start and maintain the device’s action in local network.

#### 3.5 Longitudinal balance

It is used to measure the balance performance of terminals A and B of the non-voices subscriber terminal to the ground. The definition formula of longitudinal balance  $B_{m-1}$  is:

$$B_{m-1} = 20 \lg(E_m/E_1) \quad (\text{dB})$$

In the formula,  $E_m$  is called lateral voltage, and it is the potential difference between terminals A and B.  $E_1$  is called longitudinal voltage. It is caused by the unbalance of terminals A and B to the ground. And it is equal to 1/2 of the vector SUM of the potential difference of terminal A to the ground AND the potential difference of terminal B to the ground.

When not sending the dialing signal, the level of each single-frequency signal in dual-tone multifrequency signal shall not be greater than -70dBm.

#### **4.5 Automatic calling and answering process**

The following procedure parameters shall be configured as the default settings of the device.

##### **4.5.1 Sending conditions of dialing signal**

The non-voices subscriber terminal shall wait for at least 2s before sending digital signal since entering the “off-hook” state.

When a dial tone detection method is adopted, the sending of dialing signal is not restricted by the above time limit.

##### **4.5.2 Time limit for waiting for answering after dialing**

When the non-voices subscriber terminal has not received the answering signals sent by the opposite terminal after at most 50s from it sending the last dialing signal, it shall cut off the DC circuit and return to the “on-hook” state.

##### **4.5.3 Interval and times of automatic recalling**

Under the conditions of 4.5.2, if there is need to recall this number, it shall wait for at least 30s from returning to the “on-hook” state before entering into “off-hook” state and recalling. It shall not recall the same number for more than three times. After 3 times of re-calling, there shall be at least 5min time interval before recalling this number (except for antitheft, fire prevention, rescue, and other emergency situations).

##### **4.5.4 Interval time limit for subsequent call**

The non-voices subscriber terminal shall enter into the “off-hook” state to call the next number after at least 5s from it returning to the “on-hook” state.

##### **4.5.5 Response time to ringing**

If non-voices service is the key business, it is allowed the non-voice subscriber terminal to close the DC circuit and enter into the “off-hook” state within 5s from receiving the ringing signal.

resolution is 1ms, with storage and display functions.

**Figure 9 Test connection of dual-tone multifrequency signaling**

- c) Under the state of not sending signal, use frequency selection level meter to measure the level value of each signal frequency in the dual-tone multifrequency signals, that is the signal leakage level value.
- d) Let the device under test to send dialing signal continuously, and use storage oscilloscope to test the continuous time and interval time of the signal.

**5.5 Test of electric safety indicator**

The test method of electric safety indicator shall comply with the relevant provisions of YD/T 965.

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