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GB/T 43969-2024

**General safety technical requirements for intelligent speech
control**

智能语音控制器通用安全技术要求

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Foreword

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Intelligent speech refers to the process of intelligent control systems realizing information processing such as sound collection, speech recognition, and semantic understanding through machine perception technology. The program uses natural language understanding and other technologies to analyze, thereby realizing a complete set of computing processes including human-computer dialogue, intelligent analysis and decision-making. Research shows that voice has become an important landing technology for artificial intelligence. The combination of voice and home appliances has created an explosive growth point for the home appliance industry. Home appliances with voice technology have become one of the important interactive entrances to smart homes, but at the same time, smart home device intrusion and user privacy data theft are also a major concern. Incidents such as the use of encrypted messaging systems indicate that there are huge security risks in the smart voice ecosystem. Since traditional controllers mainly focus on hardware and electrical aspects, with the integration of intelligent technology, it is urgent to add corresponding specifications to Adapt to changes, and because smart technology generally uses big data and wireless networks, corresponding regulations are also needed in terms of information security and privacy. Intelligent voice technology relies on the collection, transmission, recognition and understanding of the user's voice to achieve specific functions, such as home appliance control and information query: and identity recognition, and may use voiceprint analysis, voice feature collection, voice content storage, etc., involving the prevention of Security requirements such as unauthorized access to hardware, preventing unintended use of voice functions, and protecting user privacy data from unauthorized access. This requires corresponding specifications to ensure the safe use of intelligent voice control: General safety technical requirements for intelligent voice controllers

1 Scope

GB/T 43969-2024 sets the general safety technical requirements for intelligent voice controllers, the devices that take a spoken command and act on something physical, a lock, a heater, a cooker, a window, a vehicle function. The safety problem is specific to the modality and is not covered by ordinary appliance safety: speech can be issued by someone outside the room or the house, replayed from a recording, synthesised, or embedded inaudibly in other audio, and a command that would require a deliberate

physical act if it were a switch can be given accidentally by a television. The standard sets the requirements that answer that: the identification and authentication of the speaker where a command is consequential, the rejection of replayed and synthetic speech, the confirmation required before a high-risk action, the limits on what may be commanded by voice alone, the local fallback and manual override, the protection of the audio data and of the user's privacy, and the electrical and functional safety requirements, together with the corresponding test methods. It takes effect on 1 November 2024.

This document specifies the classification, technical requirements and test methods for the general safety of intelligent voice controllers: This document applies to all types of household and similar electronic products with intelligent voice control functions covered by the GB/T 14536 series of standards Security assessment of the voice controller (hereinafter referred to as the "voice controller"):

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document: For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document:

GB/T 2421-2020 Environmental testing overview and guidelines

GB/T 14536:1-2022 Electric automatic controllers Part 1: General requirements

GB/T 35273-2020 Information security technology Personal information security specification

3 Terms, definitions and abbreviations The terms, definitions and abbreviations defined in GB/T 14536:1-2022 and the following apply to this document: 3:

1 Terms and Definitions 3:1:

1 Voice controller speechcontrol Through voice recognition, voice input is converted into device interaction or function control instructions, thereby interacting with or controlling the function of the device: Type of controller: 3:1:

2 Speech recognition The process of converting human voice signals into text or instructions: [Source:

GB/T 21023-2007, 3:1] 3:1:3 wakeupcommandwordwakeupcommandword A structured keyword used to wake up the voice interaction system in the keyword recognition state: [Source:

GB/T 36464:1-2020, 3:18] 3:1:4 A speech recognition method based on speech recognition

grammar is to recognize a given speech input within the scope of speech recognition grammar rules: The speech recognition engine gives the text within the coverage of the speech recognition grammar or rejects the recognition as the recognition result:

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