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**Ergonomics—Accessible design—
Sound pressure levels of auditory
signals for consumer products**

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law.

Consequently **JIS S 0014:2009** is replaced with this Standard.

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Ergonomics—Accessible design— Sound pressure levels of auditory signals for consumer products

Introduction

This Japanese Industrial Standard has been prepared based on the first edition of **ISO 24501** published in 2010 without any modifications of technical contents.

The portions with dotted underlines are the matters not given in the corresponding International Standard.

This Standard was established in 2003. And then based on it **ISO 24501** was published in 2010 as the first edition.

People conduct their daily lives surrounded by various consumer products. Consumer products, as defined in **ISO 20282-1**, include home electrical appliances, information and telecommunication products, gas-heating equipment, toys, sanitary equipment, and health-care products, many of which use auditory signals. These auditory signals can be indistinct because of the hearing loss which occurs with ageing or because of interfering sounds in the surroundings. Also, with age, our visual ability declines gradually. Auditory signals with an appropriate sound level can assist product users with auditory or visual impairment in using the product correctly and safely.

This Standard specifies methods for determining an appropriate sound level range of auditory signals, so that all product users, including people with age-related hearing loss, can hear them properly against interfering sounds. This sound level range specification was determined, based on results of experiments in which people of all ages participated. Auditory signals whose sound pressure level is in that range are expected to be audible and comfortably loud for most users in the presence of interfering sounds.

This Standard should be applied as appropriate to products, depending on the product type and its conditions of use. It does not apply to machines and equipment used for professional work.

This Standard adopts the principles of accessible design given in JIS Z 8071 and amplified in **ISO/IR 22411**.

1 Scope

This Standard specifies methods for determining the sound pressure level range of auditory signals so that the users of consumer products, including people with age-related hearing loss, can hear the signal properly in the presence of interfering sounds.

Auditory signals, in this Standard, refer to sounds with a fixed frequency (also called beep sounds) and do not include variable frequency sounds, melodic sounds, or voice guides.

This Standard is applicable to auditory signals which are heard in the room¹⁾ at an approximate maximum distance of 4 m from the product, as long as no physical