

Summary of
The World Health Organisation and International Telecommunications Union H.870 Standard

Recommendation 1:

Every device* should measure the listener's use of sound allowance, based on a choice of two modes of reference exposure

**Device in this context means the parts of the Personal Audio System, the Personal Audio Device (mobile phone handset or music player) and the listening device or headphones. Modes are for adults and children.*

Recommendation 2:

Each device should include options for limiting volume, and parental control

Recommendation 3:

Through the device interface, instruction manuals and other means such as packaging, the device shall provide, the user with personal usage information, personalized messages and cues for action, and general information on safe listening

At present H.870 is a voluntary standard but The World Health Organisation (WHO) and International Telecommunications Union (ITU) are engaging with governments and others to actively encourage the mobile phone handset and headphone manufacturers to do the right thing and conform to the standard.

Regulation

In December 2020 IEC/UL/EN 62368-1:2018 will become the worldwide product safety standard that will include audio output from mobile phone handsets.

After this date it will be mandatory for all mobile phone handsets sold in the EU to comply, whilst in North America all new products entering the market will need to meet the standard.

It is understood that other major markets including India, China, Japan and Australia and New Zealand will introduce the same or similar standards.

What does this mean for mobile phone handset manufacturers?

IEC/UL/EN 62368 gives the mobile phone handset manufacturers a choice to provide either:

Option 1. Simple user warning at a proscribed volume setting on the handset

Or

Option 2. Enhanced protection using software to calculate the user's sound dose from headphones and present them with information and messages, along with automatic protection when they choose.

The Option 2 is strongly recommended in the standard and takes a significant step towards delivering The WHO and ITU H.870 standard. The Option 1 is similar to existing EU requirement.

What does this mean for headphone manufacturers?

IEC/UL/EN 62368 requires manufacturers of headphones and earbuds intended for use with mobile phones to fall in line:

Wired Headphones – Comply with Option 1 and restrict the sensitivity of their headphones to ensure the mobile's nominal safe level warning is relevant (which may constrain the user's experience); few wired headphones will have the ability to follow Option 2.

As there is no control available in these headphones the manufacturer will have to adopt Option 1 and make their headphones meet the minimum sensitivity level as required by the standard. For many manufacturers this will mean decreasing the headphones sensitivity which could make their maximum sound level such that they become unusable in many common listening environments, especially those with significant ambient contribution.

Wireless Headphones – With their greater sophistication, Option 2 becomes possible. Added functionality can be embedded in the headphone to collect hearing data and either implement the proscribed protection measures or relay data back to the handset for display and management. Mobile phone handset manufacturers who also manufacturer headphones could be at a distinct advantage.

HearAngel® is able to deliver the features required to meet H.870 and IEC/UL/EN 62368.