T20-503

Tohoku University's Invention

Haptics technology for highly realistic reproduction of audio signals, etc.

Reproduce realistic sensations even with narrow bandwidth vibration devices! No noise!

Summary

Haptic technologies to feedback vibrations are being developed for audio signals, such as music (vocals and musical instruments), and the feel of remote devices. However, it is difficult to convert the high-frequency component of the signals to haptic feedback directly due to the weakness of sensation. Increasing the output of the high-frequency component also generates sound noise from the housing. In addition, the current mainstream vibration devices that use resonance and have a narrow bandwidth are limited in the information they can reproduce.

This invention enables to provide signal processing and devices that convert vibration signals containing high frequencies, such as audio signals, into low-frequency components while retaining the original sense of touch, by using the perceptual characteristics of high-frequency vibration in humans.

Effect

- Reproducing realistic experiences even with a narrow-band vibrator.
- Converting existing audio and sound effects into tactile signals to generate a high sense of presence in combination with audio.
- Improvement of workability through remote control of robots, etc.

Application

- Improving the experience of audio and visual contents such as music and movie, etc.
- Entertainment such as video games, etc.
- Haptic feedback to a remote operator.

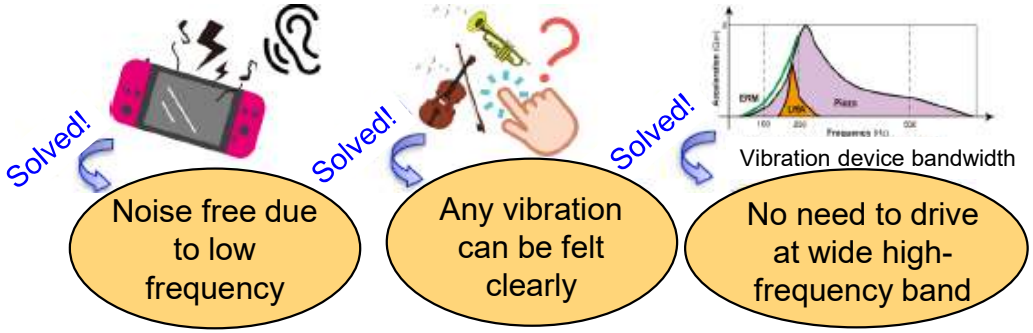
Application fields Mobile, game, VR, music, movie, robot, etc.

＜Solving the problem of conventional vibration presentation＞

◆Noise generation

◆ Less sensitive in high frequency

◆ Device bandwidth limits



Patent Data Sheet

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