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## A finger-ring shaped wearable handset based on bone-conduction

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### Abstract:

This paper introduces a finger-ring shaped wearable HANDset. It uses the human finger as a transmission route for the receiving voice (bone conduction). Vibration noise is reduced using a newly-created microphone unit named "Duaphragm" that can suppress echo by about 70%. Duaphragm provides a small, low-power, and low-cost means of reducing vibration noise. In addition, a new LSI chip that integrates an accelerometer and a tapping command detector allows the handset to be controlled by tapping the fingertip on which the device is worn. Keywords: interface device, headset, noise cancel.

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### 1. Introduction

In recent years, the miniaturization of wearable devices has been moving ahead at a rapid pace. Connecting wearable devices has become easier with the emergence of short-range wireless communication methods such as Bluetooth. This suggests the possibility of an ideal operating style of "wearables"; various tiny interface devices are flexibly combined to suit the situation.

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### Keywords

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