

PerCom

HIGH PERFORMANCE BONE CONDUCTION MICROPHONE

The 17MIT Miniature Inertial Transducer is a high performance bone conduction microphone for use in direct contact with the user's skull or neck.

Unlike many bone conduction microphones, particularly piezoelectric types which exhibit a single frequency peak around 1200Hz, the 17MIT has a response from 300Hz to 7kHz. Reproduced speech is therefore clear with good reproduction of harmonic frequencies.



Due to the nature of the device, it provides a high level of ambient noise rejection without the need for electronic noise cancellation. When correctly mounted it provides clear voice communications in ambient noise levels of up to 120dB SPL.

The device itself takes the form of a cylinder 17mm in diameter and 10mm high. However in order to maintain its noise rejection qualities it must be adequately isolated from mechanically transmitted noise. This is achieved by mounting it in a housing such as that pictured.

Electrically the device looks similar to a dynamic microphone, normally with an impedance of 2000 ohms. Although it's frequency response is relatively flat, the response of the human skull is not and the sound picked up from the skull has quite different spectral content depending on the location of the microphone.

From a practical perspective it is necessary to compensate for the effect of the skull and this is normally achieved by use of an interface amplifier. Depending on the application, such amplifiers can either be built into the microphone housing or be housed externally. The microphones can be supplied either with or without an integral amplifier. Units with an integral amplifier can be powered from an electret microphone supply and effectively appear as an electret microphone.

Specifications (for mic without interface amplifier)

Impedance	2000 ohms
Sensitivity, free air	.002G for 2mV RMS out at 1KHz
Directivity pattern	Figure 8, front and back in phase
Frequency response	300 - 12000 Hz +/- 10dB
Noise rejection	Usable in ambient noise up to 120dB SPL
Max altitude	15000 feet
Max water depth	10 feet (higher rated devices available on request)
Weight (basic device)	6.5 grams
Weight (in housing)	25 grams
Connector (in housing)	IEC No. 5 right angle

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