INTERNATIONAL STANDARD

IEC 61842

First edition 2002-03

Microphones and earphones for speech communications

© IEC 2002 — Copyright - all rights reserved

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



PRICE CODE



CONTENTS

FO	REWC	DRD	3		
1	Scop	Scope			
2	Normative references		4		
3	Terms and definitions				
	3.1	Classification	4		
	3.2	Devices for measurement	6		
	3.3	Characteristics and performance	6		
4	Characteristics and measuring procedures				
	4.1	General conditions			
	4.2	Rated conditions			
	4.3	Measuring conditions			
	4.4	Microphones for speech communications			
E	4.5	Earphones for speech communications			
5		Ministry 4 position connector			
	5.1 5.2	Miniature 4-position connector Concentric connector			
6		rance of insulation			
7		acteristics to be specified			
		(informative) Miniature 4-position connector			
		(informative) Sub-miniature 2,5 mm concentric connector with three contacts			
		phy			
טוט	iiogra	ony	20		
Fig	ure 1	– Artificial ear for ordinary earphones	18		
_		Example of the case for microphone unit measurement			
_		Example of the case for earphone unit measurement			
_	Figure 4 – Determination of the artificial mouth position from the earcap reference point20				
-		- Calibration system diagram for output sound pressure from artificial mouth			
_	Figure 6 – Measuring system diagram for microphone unit sensitivity21				
_	Figure 7 – Diagram of listening test for normal operation of microphone				
Figure 8 – Measuring system diagram for earphone sensitivity					
Figure 9 – Diagram of listening test for normal operation of earphone					
Figure 10 – Connection designation for plug of miniature 4-position connector					
·					
_		1 – Shape and basic dimensions of plug for miniature 4-position connector			
_		2 – Shape of plug interface part of jack for miniature 4-position connector	26		
		1 – 2,5 mm pin concentric connector (plug) with three contacts (tip, ring and	27		
5,00	. • o j		1		
Tab	ole 1 –	Definitions of earphone, headphone, earset and headset	16		
Tab	Γable 2 – Characteristics of microphones for speech communication to be specified				
		ification	16		
		Characteristics of earphones for speech communication to be specified	4 -		
and	ı class	ification	17		

INTERNATIONAL ELECTROTECHNICAL COMMISSION

MICROPHONES AND EARPHONES FOR SPEECH COMMUNICATIONS

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61842 has been prepared by IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this standard is based on the following documents:

FDIS	Report on voting
100/450/FDIS	100/479/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until 2005. At this date, the publication will be

- reconfirmed;
- withdrawn;
- · replaced by a revised edition, or
- · amended.

MICROPHONES AND EARPHONES FOR SPEECH COMMUNICATIONS

1 Scope

This standard applies to the microphone part and earphone part of handsets, headsets or earsets for speech communications, and also to the microphone units and earphone units of built-in handsets, headsets or earsets. The object of this standard is to establish definitions relating to these electroacoustic transducers, and to standardize the characteristics to be specified and the relevant methods of measurement. This does not exclude the use of other methods of measurement which can be shown to give the same or more reliable results.

2 Normative references

The following reference documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60268-1:1985, Sound system equipment – Part 1: General

IEC 60268-4, Sound system equipment – Part 4: Microphones

IEC 60268-7, Sound system equipment – Part 7: Headphones and earphones

IEC 60318-1, Electroacoustics – Simulators of human head and ear – Part 1: Ear simulator for the calibration of supra-aural earphones

IEC 60603-11:1992, Connectors for frequencies below 3 MHz for use with printed boards – Part 11: Detail specification for concentric connectors (dimensions for free connectors and fixed connectors)

IEC 60711, Occluded-ear simulator for the measurement of earphones coupled to the ear by ear inserts

IEC 61094-1, Measurement microphones – Part 1: Specifications for laboratory standard microphones

IEC 61094-4, Measurement microphones – Part 4: Specifications for working standard microphones

ITU-T P.51, Artificial mouth

ITU-T P.370, Coupling hearing aids to telephone sets